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February 1993

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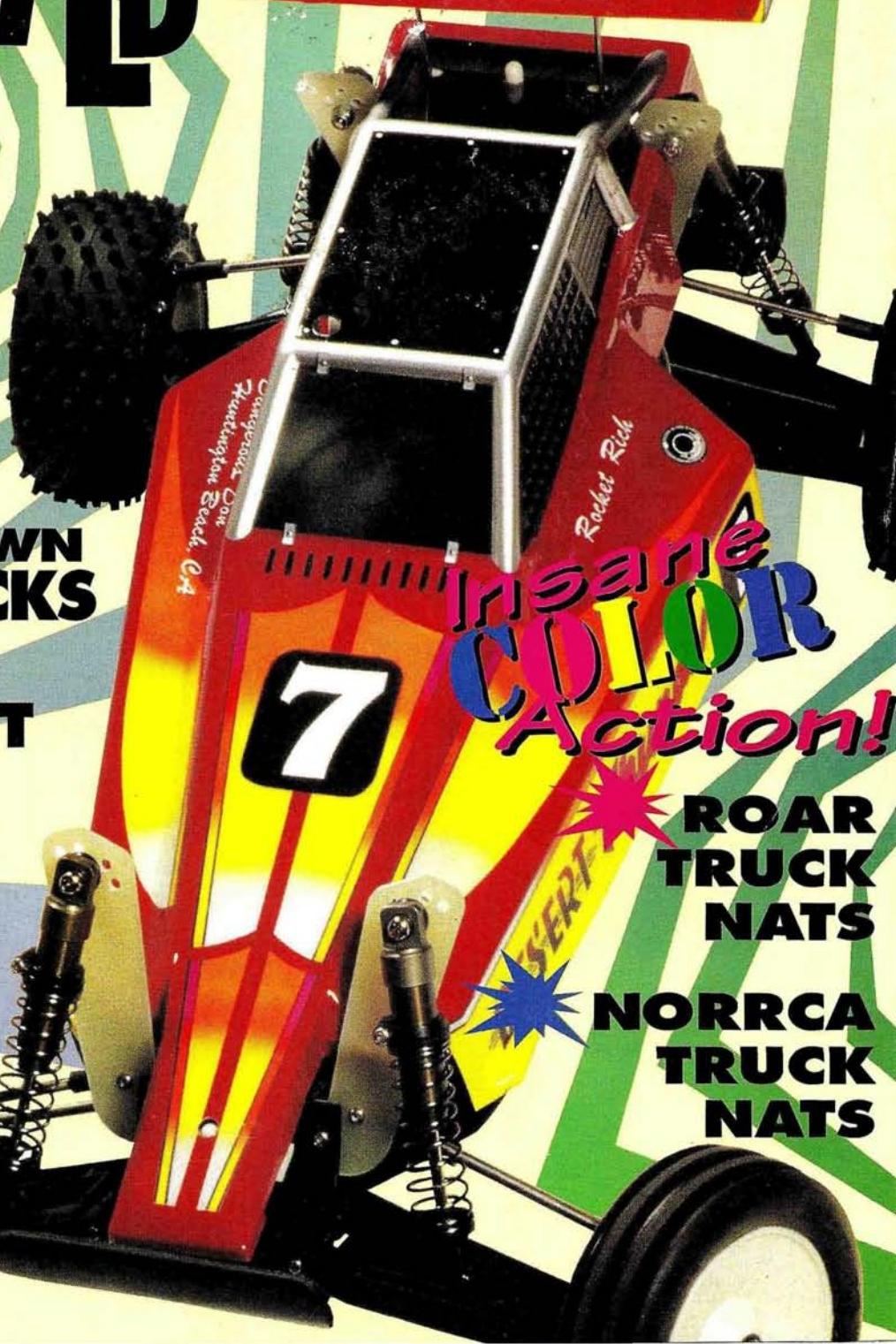
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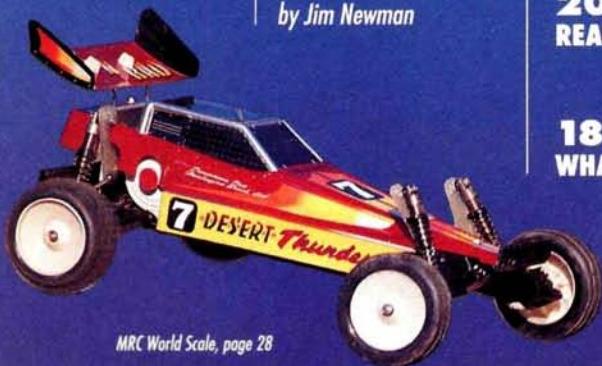
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ROAR Truck Nats, page 108 (photo by Joel Johnson)



EDITORIAL



Blimp paratroopers! Car Action's editors take to the sky. At the '92 R/C Thunderdrome, executive editor Frank Masi and associate editor John Howell had the once-in-a-lifetime thrill of actually riding in the famed Goodyear blimp. Don't tell Goodyear, but they also took turns at the controls, too!

'92 WAS A VERY GOODYEAR

WHAT AN awesome race! I've just returned from the R/C Thunderdrome in L.A. (as always, accompanied by my faithful sidekick, Cadet Doogie), where the world's fastest superspeedway drivers converged to find out who could handle the intense speeds on the high-banked velodrome.

As with all previous Thunderdromes, *Car Action* was the primary sponsor. We handed out hundreds of magazines, covered the world's fastest R/C race with no fewer than five photographers—the most comprehensive event coverage around—and, most important, met loyal readers!

One of the best parts of this job is meeting people who read *Car Action*. That's why I get so "amped" when I go to trade shows or to cover races; direct feedback from you is the best way for us to know how you feel about our work. It's difficult to know what people want to read about. Sure, you could gauge a magazine's success by the number of its readers, but I think there's more to it than just numbers on a sheet of paper.

Magazines can't be published from an ivory tower; if we write only about the things that are interesting to us, we'll probably lose quite a few readers. That's why I love getting out and talking to you. I'm often a little surprised by your comments; you might be crazy about an article that I didn't think would attract much enthusiasm, or you might not be as pumped up about a feature that I thought would be a big hit. The bottom line? *Car Action*'s goal is to publish articles that are of interest to as many R/C enthusiasts as possible. Not every reader will like every feature, so we try to find a balance among the many facets of an exciting hobby. If you happen to see us at a race or a show, c'mon over and let us know how we're doing.

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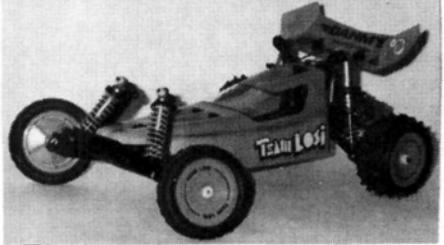
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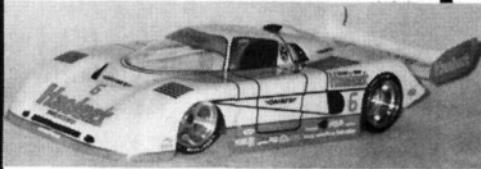
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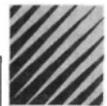


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L E T T E R S

WRITE TO US! We welcome your comments and suggestions. Letters should be addressed to "Letters," *Radio Control Car Action*, 251 Danbury Rd., Wilton, CT 06897. Letters may be edited for clarity and brevity, and each must include a full name and address or telephone number so that the identity of the sender can be verified. We regret that, owing to the tremendous numbers of letters we receive, we can't respond to every one.

SWEEEPSTAKES WINNERS

Congratulations to Brandon Baker, Aaron Moe, Eddie Paez, Laurence Ottinger and Richard Hunter—the winners of the recent DuraTrax/Radio Control Car Action Sweepstakes that ran in the "Radio Control Off-Road" special.

READER REACTION

In a recent editorial, you asked hobby shops to "get involved" and promote the hobby.

We followed your advice—bought 2x4s and set up a race track in the parking lot in front of our shop. First we had 20 racers show up—then 30, then 40. Not bad, considering it was 110 degrees Fahrenheit in Bullhead City.

In what are traditionally our slowest months, we've doubled our sales from last year. In your editorial, you said that you'd guarantee we'd "attract interested onlookers" and potential customers, but did you realize we'd get 30 to 50 people (potential new customers) who, while driving by, saw the action and stopped to watch? Did you know we'd catch the eye of the management of a major hotel/casino, who called us and said "We'd like to do this in our parking lot. It looks like fun!"?

The enclosed flyer is the result of that conversation. The people at the Edgewater hotel are having its parking lot resurfaced at a cost of several thousand dollars. They've hired two world champions (Jay Halsey and Tony Neisinger) and the "Swedish Bikini Team." They've promised us one hour of television coverage, and they're putting up thousands of dollars in prizes, including vacations, R/C cars, T-shirts, hats and trophies. They've also hired NORRCA to run the race and to keep score. Most of the major teams are coming. I'm hoping that you can come, as

I'd sure like to shake your hand and say "Thank you." After all, this all started as an editorial in your magazine.

BOB OLSEN
G & S Hobbies
Bullhead City, AZ

TO THE POINT

Yo, great mag. Can you give me the address and phone number for the SEMROCC R/C Club in Michigan?

WILLIAM (ANIMAL) LANNING
Rittman, OH

No problem, William. You can get a hold of SEMROCC at 288 East Maple #266, Birmingham, MI 48009. The head man there is John Thawley. JH

RADIORAMA

I'm thinking of getting an Outlaw Rampage, but I don't know what radio to buy. I had the Airtronics Caliber 3P in mind, but I want to know what you think of it. Also, what's the best nitro content for the Outlaw Rampage?

STERLING FELIX
Pukalani, Maui, HI

Airtronics radios are extremely good. You might also want to check out Futaba, KO Propo and JR Propo. Research each one and go from there. The nitro content of your Outlaw Rampage fuel should be no more than 20 percent; 15 percent is recommended. JH

PAINT PATROL

I subscribe to your magazine, and I really like it. It has lots of tips and helpful hints. I've recently bought the Enforcer. Can you give me any information about people who do detailing or do graphics for the Enforcer body?

PAT DOLLAK
Sun Prairie, WI

Pat, we recommend Richard Muise at Motion Graphics, 2645 Robert Arthur Rd., Westminster, MD 21157, (410) 848-

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0008; Scot Bich at Bich'n Bodies, 4903 Cloverfield Dr., Pearland, TX 77584, (713) 485-0413; Todd Kerby, 1623 East Casper, Sandy, UT 84092, (801) 561-7239; and Mike Ogle, 161 East 18th St., Costa Mesa, CA 92627, (714) 631-7312.

JH

BODYWORK

As a last, desperate resort, I've decided to write to try to get a lead on a problem I've encountered. At the moment, I'm building a 1/8-scale 4x4 pickup truck that I'm having a very difficult time finding a body for. I'm looking for something in the line of a Chevy or Ford 1/8-scale truck body. I've even gone as far as to try and vacuum-form a body myself, but trust me, it didn't turn out so well.

I like the USA-1 Nitro Crusher truck's body, but it's way too small for my chainsaw-engine powered chassis.

TIM STACY
Davenport, FL

Tim, look no further. I just got back from the Chicago RCHTA show, and when I visited the Parma/PSE display, I noticed this trick 1/8-scale racing-truck body. It looked really cool and received attention from many 1/8-scale gas racers at the show. You can contact Parma/PSE at (216) 237-8650. Another place to check is MRC—(908) 248-0400. They have a new lineup of vehicles called "World Scale," and two of them have truck bodies. Dahn's has also just released its Commando XL8 1/8-scale racing-truck body. It's hot! Good luck with your project; send us a picture when you've finished.

JH

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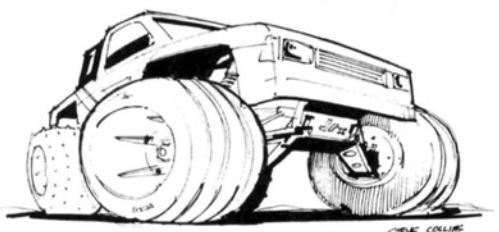


Also Winning with FINE DESIGN: Terence Holt, Team Fine Design • Chester P., 1992 Worlds' Champion.

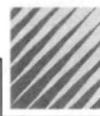
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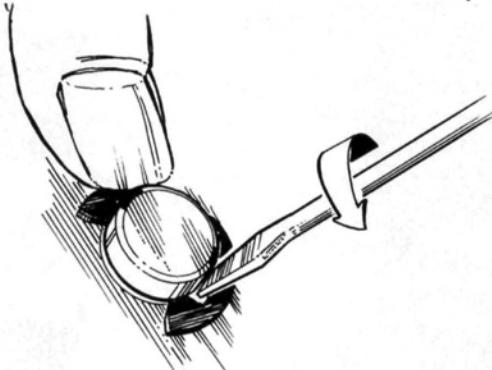


STEVE COLLINS



PIT TIPS

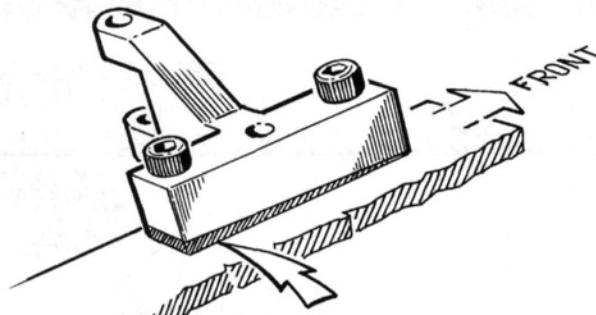
by JIM NEWMAN



E-CLIP REMOVAL

To remove E-clips easily, hold one side with your thumbnail while you pry the other side up with a small screwdriver. The pressure of your nail will prevent the clip from flying across the shop as it pops out of the groove.

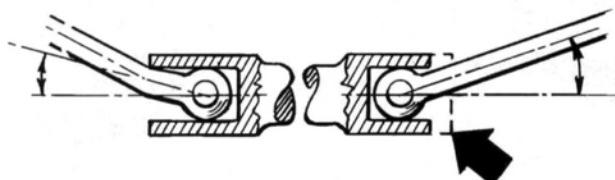
James L. Deypalan, Bacolod City, Philippines



COBRA CASTER ADJUSTMENT

Here's a quick, easy way to adjust the caster on a Cobra. File a little suspension-block material away, slacken the screws, insert some thin shims and re-tighten the screws securely. You can set the caster precisely to the amount you desire. (You can find metal shim material in the K&S metal center at your hobby store.)

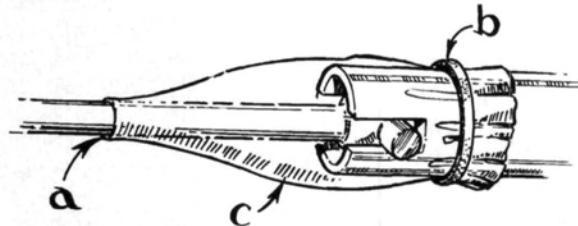
Joel Navarro, Escondido, CA



YZ-10 DOGBONE TRAVEL

Yokomo YZ-10 dogbones bend because they rub against the diff outdrives at extreme suspension angles. Shorten the outdrive a little to allow the dogbones to swing through a wider range of travel without binding.

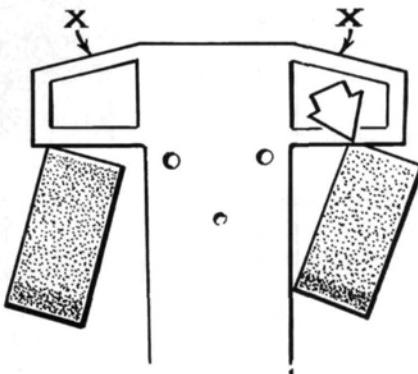
Desmond Tse, Calgary, Alberta, Canada



DOGBONE BOOTS

To keep grit out of the universal joints and minimize wear in the dogbones, cut the fingers off rubber gloves and slip the fingers over the joints. The finger (c), can be glued at (a) and secured at (b) with an orthodontic rubber band. Balloon necks can be used for boots, too.

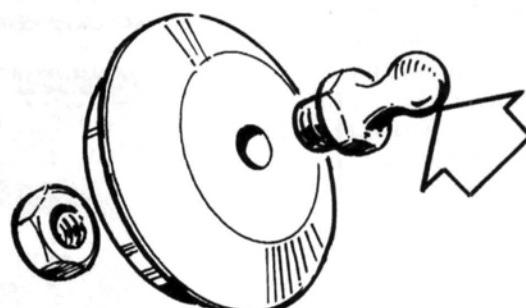
Rut Tabcomb, Tappan, NY



LAMBORGHINI STEERING CLEARANCE

The Kyosho Lamborghini steering sometimes sticks because the tires "catch" on the rear edges of the bumpers (X). To eliminate the problem, shave away some of the bumper (see arrow) so that the tires clear it.

Mike Morris, Bolingbrook, IL



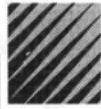
RC10 EASY DIFF ACCESS

Drill through the center of a differential cover, then insert a ball connector and secure it with a nut on the inside. The ball connector makes a handy knob that gives you a better grip on the cover.

D.S. Palmer, Camp LeJeune, NC

(Continued on page 26)

PLEASE NOTE: Be sure to print your name and full address clearly on every letter and sketch you send to Pit Tips. We have to throw away many good tips because we don't have the sender's name or address.



TROUBLESHOOTING

by FRANK MASI

If you have a technical problem that your hobby shop or racing friends can't resolve, give us a shout at Radio Control Car Action, and we'll see if we can chase down an answer for you. Questions should be of a technical nature and should be addressed to Troubleshooting, Radio Control Car Action, 251 Danbury Road, Wilton, CT 06897. We regret that, owing to the tremendous number of letters we receive, we can't respond to every one.



PREMATURE PEAKING

I have a Pro-Tech 706 digital auto-peak charger that I bought used for a very good price. Unfortunately, it peaks prematurely, and I don't get a full charge. I first noticed it when I ran about 40 seconds short of finishing a sanctioned race without having changed the gearing since I switched from my old charger.

Did the guy I bought it from find it easier to replace the charger rather than fiddle with it, or am I using it incorrectly? I'm often at the track, but haven't seen him since I bought it.

Dennis Stevenson, Highland, MI

It's relatively common for peak-detector chargers to "false-peaking." Peak-chargers operate by monitoring the pack's voltage; when the voltage reading stabilizes, the charger determines that the pack has been fully charged, and it automatically turns off. During the charging, the pack's voltage will sometimes stabilize for a moment and trick the charger into thinking that the pack has been fully charged. This is more common with older batteries, most especially with packs in which one or more cells is weaker than the rest.

To ensure that your batteries are receiving a full charge, you can monitor the charger's voltage using a digital voltmeter, or you can just feel the pack; if it feels warm, it's fully charged. (Caution: never allow batteries to become excessively hot during charging, or you'll risk damaging them irreversibly.)

If you suspect that your batteries aren't fully charged, depress the charge button on your charger again, and keep doing this until the pack feels slightly warm. Remember, always monitor the battery when you re-peak it—just to be on the safe side!

RAMPAGE RUMORS

I've been told that the .12 engines in 1/10-scale gas trucks are difficult to start. My local hobby shop says I can't use a bigger engine in one. The Schumacher Nitro 10 costs too much for me, so I'm thinking of buying a Kyosho Outlaw Rampage. Can you please help? Keep up the awesome magazine.

Ryan Gowan, Port Alberni, CA

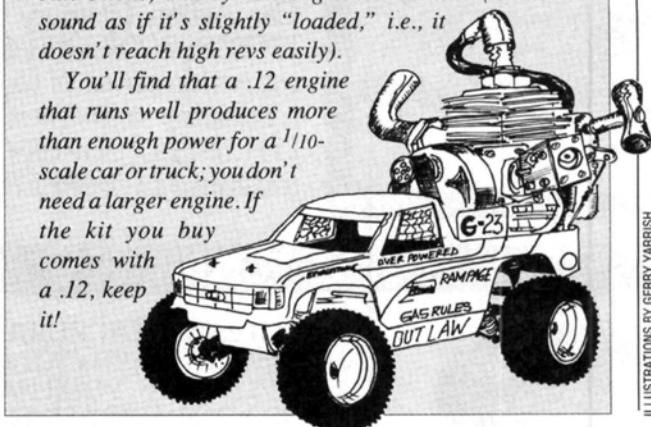
A .12 engine is hard to start? Nothing could be further from the truth! As long as certain guidelines are followed, there's no reason why a gas engine shouldn't start easily and last a long time.

First, it's important to read the manufacturer's instructions about proper carburetor settings. This is the most crucial adjustment you can make to a gas engine. A carburetor's adjustment needle controls the fuel/air mixture that's delivered to the combustion chamber. Some carbs have two needles: one for low-end mixture and one for high-end mixture.

Having the correct fuel/air mixture is critical to an engine's performance. Fuel contains vital lubricants that protect an engine from wear and failure. The more fuel there is in the mixture, the more lubricant an engine receives. When an engine receives more lubricant than it needs to run, it's said to be "set rich." When it has less fuel, it's said to be "set lean."

All engines must be broken-in—period! This process varies according to manufacturer, but a rule of thumb is to run the engine rich for the first three or four tankfuls of fuel. You'll know whether your engine is set rich by watching the exhaust (a rich engine produces clouds of blue smoke) and by listening to how it runs (it should sound as if it's slightly "loaded," i.e., it doesn't reach high revs easily).

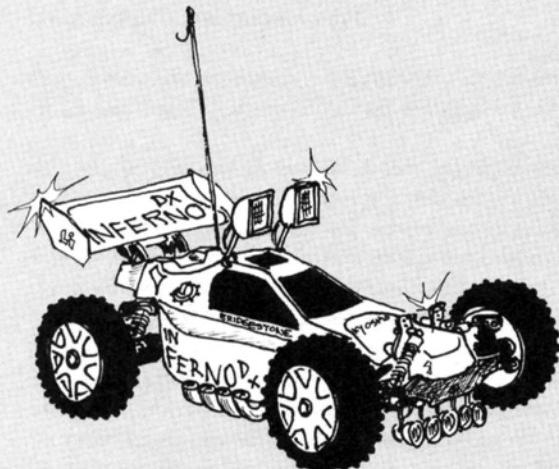
You'll find that a .12 engine that runs well produces more than enough power for a 1/10-scale car or truck; you don't need a larger engine. If the kit you buy comes with a .12, keep it!



INFERNO UPGRADES

I've been running an RC10 for a year-and-a-half (mostly backyard banging). I want to buy an 1/8-scale gas car, and I want to know what a stock Kyosho Inferno DX needs to become an Inferno. I like the two excellent articles on the Inferno in the October '92 issue. Keep up the good work at *Car Action*, and I'll keep buying and reading each issue from cover to cover.

Keith Fagin, Calgary, Alberta, Canada



I'm glad that you ask these questions, Keith, because there seems to be a general misconception about what's needed—and what isn't—for 1/8-scale off-road.

When Kyosho designed the Inferno, it went all out. No expense was spared to make it the most competitive car available—out of the box. The DX version was designed to allow gas-heads on budgets to become involved with 1/8-scale off-road. Even if you want to race with the Inferno DX, you don't need all the Inferno's components; with a few upgrades, it will be able to compete against any car.

Most gas experts think these are essential to make the DX perform as well as the Inferno:

- *First, a bearing kit (H-037, or Kyosho catalogue no. KYOC4251) is an absolute must; it will greatly enhance a car's performance as well as its durability.*
- *Next, to transfer power more effectively power to the front wheels, replace the DX's front axles with universal driveshafts (BS-20, KYOC6288).*
- *The DX's shocks work well, but for competition, you should replace them with the large-volume ones for the Inferno (BSW-27, KYOC5733—fronts; BSW-28, KYOC5734—rears).*
- *I also recommend a hardened gear set: a small bevel gear (BSW-1, KYOC3321) and a large bevel gear (BSW-2, KYOC3322), a flip-top fuel tank (BS65, KYOC4012) and an adjustable center diff (BSW-34, KYOC2808).*

There are other differences between the Inferno and the DX, but my sources at Kyosho inform me that they're just subtle ones, and only very experienced racers will notice them.

STEALTH SWITCH

I own an RC10 Team Car and I want to buy a Futaba FX-T, but I don't like its tranny setup. Can I fit a Stealth into it without drilling holes in the chassis? Will it work well? I also wonder whether Trinity's Pushed Panasonic P-170s will charge well with a Pro-Tech 702 charger. If so, for how long do I charge them?

Pat Smith, Scottsdale, AZ

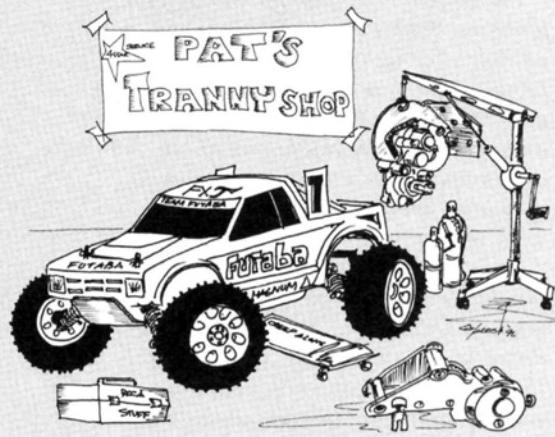
It's great to be imaginative, but I think being practical is important, too. If you want to buy the FX-T and then modify it by installing Associated's Stealth tranny, I recommend that you just buy the new version of the RC10T—the one with bushings. By the time you pay for the FX-T and the Stealth tranny, you could have bought the 10T!

I've driven the FX-T, and it works well for an entry-level truck; it handles well and is very easy to work on. Its tranny also has a great ball diff.

If you have your heart set on adapting the Stealth to the FX-T, then you'll have to consider these facts: the FX-T's transmission housing is an integral part of its chassis, so removing it may significantly weaken the car's structure. Also, the Stealth's outdrives won't mate with the FX-T's driveshafts; only custom-machining would make them fit. Now you're really into the heavy money!

Yes, the Pro-Tech 702 charger will work well with Trinity's Panasonic P-170s. First, ensure that the battery has been fully discharged. Set the charger to six cells, and crank the timer all the way to the 15-minute mark. Once the timer has finished its cycle, feel the pack; it will probably still be cool. Leave the pack connected to the charger and turn the timer to the 5-minute mark. Feel the pack again after 5 minutes; if it's still cool, repeat the second step until it's slightly warm.

A digital voltmeter will help with all this; simply plug it into the Pro-Tech's voltmeter jacks. By monitoring a pack's voltage while charging it, you'll be able to tell when it has been fully charged: the voltage will stop climbing and will level off because the pack can no longer take the charge.



TROUBLESHOOTING



BRUSHING UP

I've been racing for about a year, and I've learned a lot in that time. My local hobby shop suggested that I change my motor brushes after every three uses. They cost about \$5, and for a kid like me that's too much. Will using the brushes more than three times hurt my motor?

Justin Trinkes, Woodbridge, VA

Proper maintenance is essential to prolonging the life of your motor, but you don't have to change the brushes after every three runs. They should last much longer than that; if, after just a few runs, the brushes (and probably the commutator, too) show significant signs of wear, there's either something wrong with the motor, or your gearing is way off the mark.

If you subject your motor to a higher-than-normal load (as when you "over-gear" your car), you'll soon wear out its vital components, i.e., its commutator and its brushes. Most of the damage will be caused by overheating. The more coolly your motor runs, the longer it will last, so always gear your car conservatively, and if possible, install a motor heat sink. Also, let the motor cool between battery packs; don't just install a new pack and run immediately.

Inspect your motor brushes to look for problems. Remove the brush springs and carefully slide each brush out of its hood, being careful to note their proper positions so that you'll be able to reinstall each correctly. If the brushes are discolored (purplish, where they touch the commutator) or are cracked, chipped, or very worn, replace them.

As for stock motors, many authorities say they work best with their original brushes, i.e., the ones they came with. Performance is noticeably poorer after you've replaced them, so keep the stock motor brushes for as long as you can.

AT CLOSE RANGE

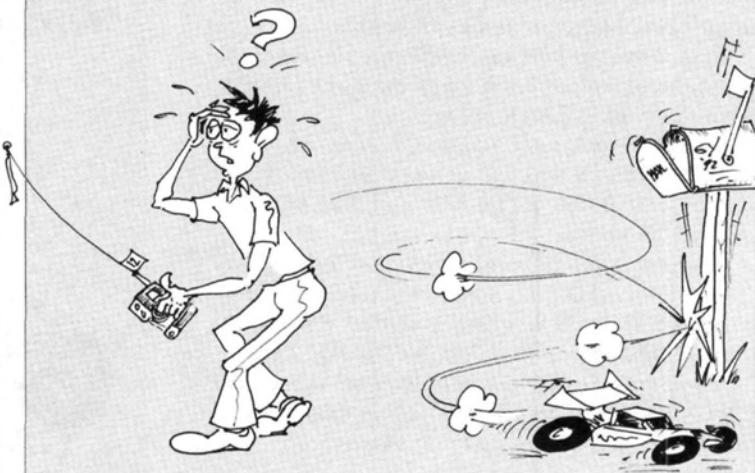
About two months ago, I bought a used RC10T. I also bought a Novak 410-M5 speed controller and an R&R Buckshot motor from my local hobby shop. The guy I bought the truck from owns the hobby shop, so they know the truck. Well, I put in my radio system—a Magnum Jr. radio, an FP-R102 JE receiver and an S148 servo, and the car glitches, but we can't figure out why. I've spent hours at the hobby shop testing different things, but nothing works. I've tried a different receiver, different crystals, two radios, and another servo. I even tried my old radio system, but nothing works. No matter what I do, I can't get the range I should. I should also mention that it doesn't glitch until I get about 75 feet away. I really need help!

John MacLachlan, Clarkston, MI

You seem to have checked virtually every component that could cause the glitching, so the solution may be something small and easily overlooked.

First, it's pretty important that the receiver be mounted correctly. To limit the possibility of interference, mount the receiver as far from the motor as is possible, because it can generate enough electrical "noise" to cause glitching. Also, many inexpensive radio systems (most of which are AM) don't produce exceptionally strong signals. To make matters worse, the tolerances used in the manufacturing of these budget radio systems aren't as tight as those of more expensive units, so it's quite common for them to get "hit" by the stronger signals of more expensive radios. When using your radio alongside other R/C drivers, make sure that the frequency you use is no more than two channels away from your radio's original frequency, e.g., if your radio came on channel 78, don't go further away than 72 on the low end or 82 at the high end. Also, try to avoid using the new, odd frequencies, as most radios have a hard time differentiating between them and even channels.

Noise-suppressing capacitors are also critical to glitch prevention. The types of capacitor used will vary according to the type of speed controller used. If a mechanical SC is used, solder a 0.1-microfarad, 50V ceramic capacitor between the motor's positive and negative lugs. If an older (not high-frequency) ESC is used, install a 0.1-microfarad, 50V ceramic capacitor between each lug and the motor can, and install a 47-microfarad, 25V, aluminum electrolytic capacitor between the positive and negative lugs. Finally, if a high-frequency ESC is used, install an 0.1-microfarad, 50V ceramic capacitor between each lug and the motor can, and between the positive and negative lugs. ■





INSIDE SCOOP

by CHRIS CHIANELLI

IN SEARCH OF GLORY AND THE GOODIES THAT WILL HELP YOU GET IT!

SHOWTIME IN Chicago

This month's "Inside Scoop" focuses on the RCHTA (Radio Control Hobby Trade Association) Show, which is held every year in the Windy City, around Halloween. Here are some of the tricked-out treats I came across.



New Rivals from Airtronics

How a Legend Relaxes

For me, the highlight of the show was meeting Indy 500 legend Gary Bettenhausen (shown here signing autographs). Mr. Bettenhausen and his sons, Todd and Cary, relax in their spare time by running large-scale, gas-powered Enforcer boats from Warehouse Hobbies in Ft. Lauderdale, FL. Mr. Bettenhausen was quite impressed with the level of sophistication to which the R/C industry has risen. I'm here to tell you clowns that you should be



impressed with him. It's not your average driver who sacrifices his position in the most important race of the year to pull a fellow driver from a smoking car. Mr. Bettenhausen has done just that—twice!



S&K AIRS Their Stuff

Meet Sid Davis (left) and Ken Dickerson of S&K. The guys are holding two of the company's latest bodies—the AIRS Pontiac stock car and the AIRS Losi LXT off-road truck body.

In case you're wondering, AIRS stands for "Air-Inducted Race System." This ducting cools the motor and the ESC, and in high-speed oval racing, it's reported to improve handling.

Airtronics, a name that's familiar to all but the most recent newcomers, introduced its new Rival 2P radio in Chicago. This advanced AM narrow-band system includes a new transmitter design (a very comfortable one, I might add), steering dual-rate, a color LED, a power monitor, an audio battery alarm, a fully retractable antenna, a mini-receiver with BEC and much more. The Rival will be available with two standard servos or one servo and the Contender electronic speed controller.

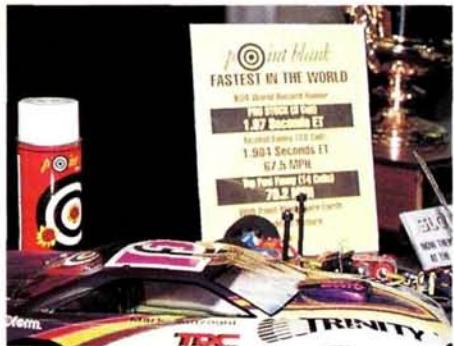


Lola Losi

Are (left to right) Jammin' Jay Halsey, Gary Kyes, "Pops" Losi and Jumpin' Jack Johnson preparing the car so Gil Losi Jr. can make a quick getaway from Chicago? No, they aren't. They're just posing with this Buick-powered, 240+ mph Lola '91-C Indy 500 car, which is owned and maintained by McCormack Motor Sports of Indianapolis, IN, and which has attended all CART races as well as the Indy 500. To further the credibility and exposure of R/C racing, Team Losi is a major sponsor of this car. It's driven by John Parsons Jr. and Jacques Villeneuve.

On Target

Point Blank—you know, the company I told you about in the January Scoop, the one that offers local hobby shops high-quality racing products at mail-order prices, the one that has a race team headed up by world-class driver Tony Neisinger—well, it made a strong showing at Chicago, and it already has many records under its belt for such a young company.



Although Composite Craft has teamed its efforts with TRC in recent years, it's once again striking out on its own with the release of this new version of the Predator. The original Predator, a potent competitor in its time, was one of the very first $\frac{1}{10}$ -scale on-road race cars. The new car, however, shares only its name with its predecessor. The new Predator is a



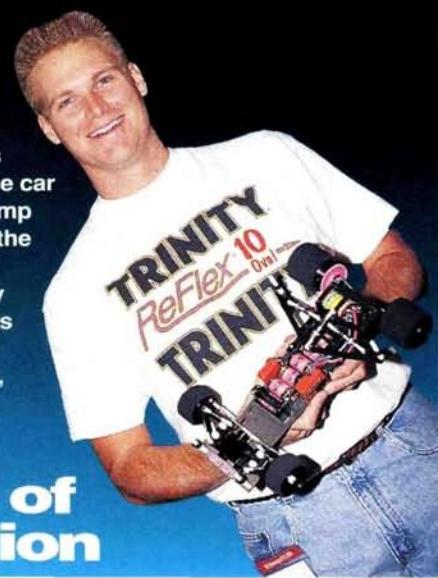
Return of the Predator

$\frac{1}{10}$ -scale on-road race car that's available for superspeedway or road-course. What sets the Predator apart from its competitors is its unique rear suspension; it uses a pivot

"tube" instead of the usual, flexing T-plate. Look for the Predator soon; this one looks like it could be really hot. We'll check it out for you soon.

No hobby show is complete without Joel "Magic" Johnson signing autographs. Joel is shown here with the car that he used to stomp the competition at the IFMAR On-Road Worlds—the Trinity Evolution 10. Joel is looking extremely healthy these days, don't you think?

The Magic of Evolution



Eustace Moore of MIP (Moore's Ideal Products) and his beautiful wife, Alycia, were gracious enough to attend our Air Age party. Rumor has it that a mini Moore is expected soon. Christopher and Christina are very classy names, don't you agree?



The MIP Family



Parma/PSE

Here are Parma president Ken MacDowell (right) and R&D manager Mike Houge posing with two new Parma bodies. Ken is holding the Stadium Truck body, which was designed for $\frac{1}{8}$ -scale gas buggies, and Mike is holding the $\frac{1}{10}$ -scale Tomcat, which is specifically fitted to the Kyosho Lazer. Parma bodies are known for the way they fit the cars for which they were designed.

Pro-Line's Extensive Line

Pro-Line debuted a new line of tires with hi-zoot XTR compound—a slight reworking of their four-year-old XT compound. The XTR compound was developed to provide serious racers with softer, more pliable tires that offer more bite on hard track surfaces. Pro-Line tires were used by the winners of every A-Main at the '92 NORRCA Off-Road Nats, and Brian Kinwald and J.D. Beckwith used Pro-Line tires to win the Modified and the 4WD Modified classes,

respectively, at the '92 ROAR Off-Road Nats. Also, Pro-Line's new $\frac{1}{8}$ -scale buggy tires were used in the A-Main at the '92 Kyosho Off-Road World Challenge gas race. Look for XTR compound to hit the tracks soon.



ZIP PAK.

Professional Power for Pennies...

It has been said the human hand is better than a computer at assembling battery packs. Don't believe it! Computers don't have bad days. They don't break up with their girlfriends and they don't have headaches. People do. That's why they don't always do the same job the same way twice. They're only human.

That's why Trinity uses an exclusive, computer-controlled, automated assembly system for their Zip Pak. Reliability and consistency are programmed in and never vary.

This automation is combined with the very finest materials. The cells are Sanyo KR1300SC (1300mAH) and there has never been a world champion that didn't run Sanyos. They've never lost! All tabs are pure nickel and as short as possible to minimize resistance. Each is double welded, and all wires are pure copper with silicon insulation. The entire assembly is pressed into a precision fitted tube which protects it from the rough and tumble world of racing.

As the bare, assembled pack nears completion, it is connected to an instrumented quality control panel which measures all facets of the pack's performance. Only then is the Zip Pak label applied.

The result is the lowest cost, highest quality sport pack available.

Buy several as back-up spares. Never be short of power.



Trinity Products Inc

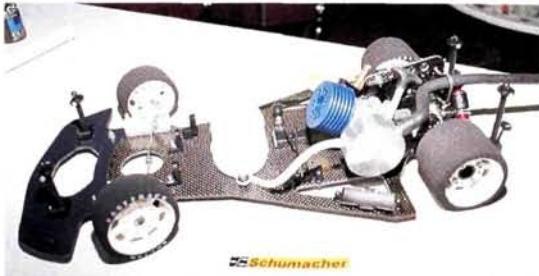
1901 E. Linden Ave, #8, Linden, NJ 07036 • (908) 862-1705 • Fax 862-6875

The new Schumacher 1/10-scale Daytona on-road car features a fully independent suspension, an Irvine .15 engine with a pull-start and a convenient, on-board, glow-plug lighting system that



English Daytona

makes the Daytona much more user-friendly. Incidentally, Tim Walden and Warren Clapp, who are both from Schumacher, attended Air Age's Saturday-night ballroom bash along with more than 300 other guests. (They were very well-behaved.)



Schumacher

Traxxas and Son

The Jenkins men of Traxxas—president Jim "JR" Jenkins (left) and national sales manager Mike—were two proud Texans after the demonstration of the new 1/10-scale Traxxas Nitro Hawk (see December "Inside Scoop") on the Chicago hobby show's indoor off-road track. This is one sweet running machine. Of course, it was time to use my Jedi mind-trick on our illustrious executive editor's weak, wooden, Howdy-Doody brain to get the



truck.

He has been coming into my office ever since, reciting in a monotone, "Chris, only you are worthy of doing the Nitro Hawk review. Save us, please." I rewarded him with a fresh can of Lemon Pledge to help him maintain his knotty complexion.

Winning by Design

• The TRINITY Championship Series™ •

Trinity's Championship series of motors is well named. The 1991 record books clearly show the Championship Series has been the hands down winner in all types of modified racing.

1991 NORRCA 4wd Dirt Oval.....	National Champion
1991 ROAR 1/10th On-Road.....	National Champion
1991 ROAR 2wd Dirt Oval.....	National Champion
1991 ROAR 2wd Off-Road.....	National Champion
1991 ROAR Monster Truck.....	National Champion
1991 Cleveland Indoor.....	National Champion

Championship motors are fast and are the first specifically designed to use Sanyo's new 1700SCRC and Panasonic's P170 SCR batteries.

RC1700	Nuclear Meltdown™	(9T, Dbl)	\$80
RC1777	Kevin, Kevin™	(10T, Trpl)	\$80
RC1778	Helter Skelter™	(11T, Quad)	\$80
RC1779	Speed Metal™	(12T, Trpl)	\$80
RC1780	Flash Point™	(13T, Sngl)	\$80
RC1781	Buzz Saw™	(14T, Dbl)	\$80
RC1782	Armageddon™	(15T, Quad)	\$80
RC1783	The Classic™	(16T, Quint)	\$80
RC1708	Joel Magic Johnson ®	(17T, Trpl)	\$80

Trinity Products, Inc., 1901 E. Linden Ave. #8
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TRINITY

READERS' RIDES

"Readers' Rides" is our way of recognizing the unique, innovative—and sometimes bizarre!—vehicles that our readers have created. Send us a sharp, uncluttered, well-exposed color photo of your car or truck (no Polaroids, please!), along with a brief description, to Readers' Rides, R/C Car Action, 251 Danbury Rd., Wilton, CT 06897. If the Ayatollah of Radio Controlla chooses your photo, you'll receive a one-year subscription to *Car Action*, or an extension of your existing subscription. You'll also be eligible for the third annual "Reader's Ride of the Year Contest" in the fall of 1993. Write your address and phone number on your letter and on the back of each photo you send, in case we need to contact you.



WINDMILL-POWERED MUGEN

Paco Raap's Mugen Super Sport '92 Readers' Ride comes all the way from Amsterdam, Holland. It's equipped with a Bergonzoni Mirage engine and Futaba 9301 servos for steering and throttle control. His tires are Cournon Atlas, and Paco controls the car with the help of an Airtronics Caliber radio. Paco, who has been racing buggies for more than eight years, started the '92 season with the new BMT 911 off-road car, but he switched back to the Mugen. Well, good luck with your racing career, and drop us a line sometime. We'd love to hear how intense gas racing is in your neck of the woods.

BEACH PATROL

A.J. Sliziewicz from Carteret, NJ, sent along a picture of his prized Tamiya King Cab. A.J. has owned this truck for more than a year and has hopped it up with a Reedy Mr. R 16-turn triple, a Trinity heat sink, a Novak 610RV ESC, a Novak NER 2-X receiver, a Futaba Magnum radio, DuraTrax oil-filled shocks, JPS aluminum tri-star rims with Pro-Line Striker II tires, Boca bearings and a custom-painted Pro-Line Chevy stadium truck body.



FRENCH FLIER

Originally from France, Claude Muller made the trek to Houston, TX, with his Kyosho Turbo Burns. Claude writes, "My machine has full ball bearings, a Serpent quick-fill tank, a Rex header and coupler, an AL650 tuned pipe, an O.S. .21 RFB engine, Aerotrend Blue Line fuel tubing, a Rossi glow plug, an O.S. Super Air Filter, a Ferodo disk brake and a Du-Bro in-line fuel filter." That's quite a few hop-ups, Claude. This gas beast is controlled by an Alpina PCM radio system. Claude plans to get a top-of-the-line Inferno soon.

REVISED EDITION

We first ran a picture of Garry Hill's stock Blackfoot in July '92. Since then, Garry, who lives in Winnipeg, Manitoba, Canada, has turned his 'Foot into what you see here. It has Associated hard shocks, JG shock mounts, a Slot Machine motor, full ball bearings, a Thorp telescopic rear end and a Futaba radio and speed controller. A set of Imex tires and wheels complements the entire package. After this picture was taken, Garry tore the 'Foot down and completely rebuilt it. Will we see it in "Readers' Rides" again?



HYPED-UP HONDA

Anthony Melillo from Metuchen, NJ, sent us this photo of his brother's R/C Honda. "He designed the paint scheme, and I airbrushed and photographed the bike," says Anthony. The Honda has been upgraded with a ball-bearing motor, oil shocks and higher-capacity batteries for those pavement-pounding excursions.



METHANOL MONSTROSITY

According to Gary Saunders, "Everywhere I go, my USA 1 Nitro Crusher instantly becomes the center of attention, and quite a crowd forms every time I drive it." Gary's truck is equipped with a full set of ball bearings, an O.S. RFB engine, front and rear stabilizers and a dual brake set. His plans for the truck include an adjustable center diff, an O.S. Rex RXB engine and a tuned pipe. So far, Gary has invested over \$1,200 and two solid months of work in this truck. Gary says it was worth it, and we agree!



GANG GREEN

Robin Pannell of Orlando, FL, has quite a car collection. The three cars on the left are by TRC/Composite Craft, and they're set up for roadcourse and banked-oval racing; the wide Lynx SS is for enduro races. An Associated 12L is the smallest member of the clan. Each car is controlled by Futaba radio gear and a Novak speed controller. Robin writes, "As you may have noticed, I like Brett Bodine's #26 car. As a matter of fact, he raced my car in the little 500 race in Orlando, just before he won the Daytona 500." Who knows, Robin? Maybe driving your car gave Brett that extra edge to win the big race!



I have a videotape of the '91 IFMAR Off-Road World Championships. I like to study the action, especially in slow motion, to try to understand what actually happens when off-road cars are driven over rough terrain. According to those who competed, the most difficult part of the Detroit Worlds track was a series of closely set bumps called the "Surf's-Up" section. The cars could enter this section fairly fast but, eventually, the bumps made them flip or slide side-

through the section could be attributed to its newly designed, liquid-filled slipper clutch—later called "Hydra Drive."

VISCOS COUPLING

The Hydra Drive is essentially a viscous coupling of the car's friction slipper clutch and the transmission's top shaft. By definition, a viscous coupling is a particular kind of fluid coupling in which input and output shafts mate with thin disks in a cylindrical chamber. This chamber is filled with a viscous fluid that clings to the disks and resists differences in speed between the two shafts.

In full-size cars, viscous couplings limit speed differences either between two outputs from a differential, or between two axles, as in an all-wheel-drive car.

The Hydra Drive's viscous coupling limits speed differences between the spur gear and the transmission's output shaft. Here's how it works: when throttle is

ways. This affected all the cars; the Team Losi 2WD cars seemed to be the most stable over this stretch. During the first leg of the A-Main, I noticed that Kyle Reed's Pro SE prototype was able to gain ground on Masami Hirosaka's Associated car through the Surf's-Up every time. Hirosaka's car bounced sideways when nearing the end of the bumps, while Reed drove a straight line. I later asked Reed about this, and he said that the Losi car's stability

applied, the spur gear rotates. The spur is keyed to an impeller, which looks something like a fan. This impeller is inside a round housing that's filled with thick fluid and keyed to the transmission's output shaft. When spun, the impeller churns the thick fluid and, through friction, the fluid drags the housing in the direction in which the impeller is spinning. The faster the impeller rotates, the greater the friction, and the stronger the coupling between it and the housing. Conversely, when the impeller spins more slowly, the difference between its speed and that of the housing is greater.

TEAM LOSI Hydra Drive

by FRANK MASI

WHAT IT DOES

By itself, the Hydra Drive wouldn't provide the low-end punch that's needed in off-road racing, because there would be an initial "spooling-up" period while the impeller worked its way up to speed. That's why the unit is used with Losi's friction slipper. You may be wondering why Hydra Drive is needed at all if the friction slipper is still used. It's simple;

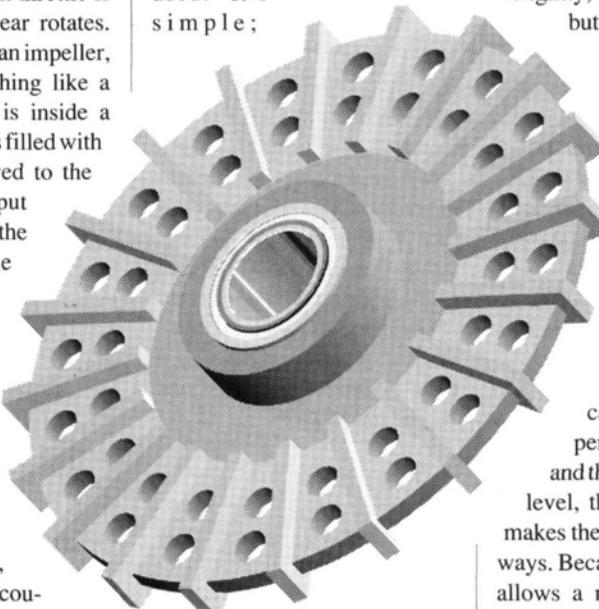
allows the friction slipper to be set much more loosely than usual; thus, it will absorb more drive-train shock and limit wheel spin more efficiently.

SHOCK ABSORPTION

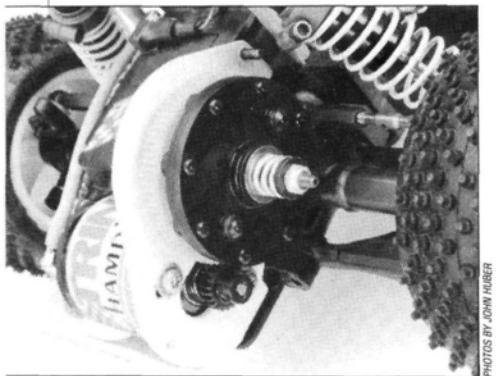
Its ability to absorb drive-train shock is one of the reasons why Reed's Pro SE was so stable through the bumps. When a car's wheels leave the ground, even slightly, the car slows down;

but the driven wheels are usually rotating just as fast when they return to the ground as they were when they left it. This difference in speed between the tires and the ground causes the tires to skid. Consequently, unless the car is traveling in a perfectly straight line and the surface is perfectly

level, this skidding usually makes the car's rear slide sideways. Because the Hydra Drive allows a much looser slipper setting, the tires/ground speed difference is "absorbed" enough to prevent the car from skidding sideways and keep it going straight.



both slippers work together to provide the best all-around control under acceleration and deceleration. Basically, the Hydra Drive al-



Team Losi's long-awaited Hydra Drive slipper system can be bolted to the JR-X tranny—no modification necessary.

Find out more about the new Hydra Drive slipper system in the next issue of RC Car Action.

Hydra Drive



Two of these quad seals prevent fluid from leaking out of the Hydra Drive. Vanes molded on the inside of the housing help the impeller to spin it.

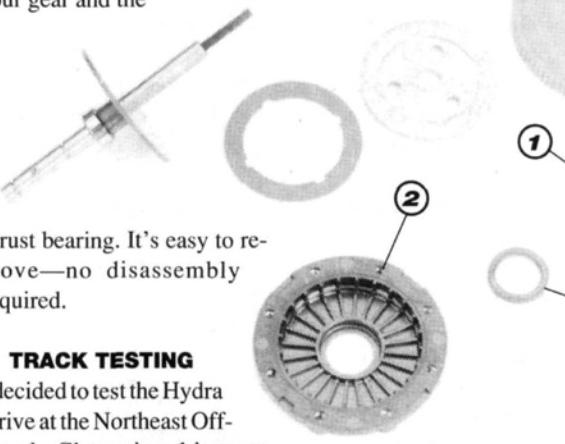
THE FEW... THE PROUD

I was fortunate to receive one of the first production versions of the Hydra Drive for testing. (The ones Losi has been using up to now have been hand-machined prototypes.) I was very curious to see whether I could really see a difference in my car's performance.

Considering the sophistication of this device, assembly is easier than you might expect. It's a simple matter of installing the impeller in the inner half of the housing then bolting the housing halves together. With that done, filling the Hydra Drive with the viscous fluid is just a matter of pouring it through one filler hole until it comes out of the other. A helpful hint for filling: when the fluid starts to bleed out through the second hole, continue until it's free of air bubbles.

This will

ensure that there isn't any air trapped in the housing. After you've filled it, simply slide the Hydra Drive onto the transmission output shaft, between the spur gear and the



thrust bearing. It's easy to remove—no disassembly required.

TRACK TESTING

I decided to test the Hydra Drive at the Northeast Off-Road Championships at American Hobbies in Englewood, NJ. This was a fairly big race with more than 140 entrants from all over the East Coast. The track layout was very challenging; its red clay surface can really get bumpy during a race—a perfect testing ground for the Hydra Drive.



The Hydra Drive impeller spins the viscous fluid that fills the housing. In turn, the housing spins the transmission's output shaft. The impeller must fit its housing perfectly (this is critical), so these parts must be precisely molded.

First, I had to get used to how unnervingly loose the friction slipper can be set; I held the rear tires and could still turn the spur gear easily! Yet, when I put the car on the track for practice, the tires still spun on acceleration. According to Team Losi's Jack Johnson, the proper way to set the slipper is to find the slickest part of the track and make a series of standing starts; adjust the slipper until wheel spin is at a minimum. After setting the friction slipper and garnering some practice time, I was ready for the qualifiers.

I noticed two things while using Hydra Drive:

- I could use rear tires that others couldn't.

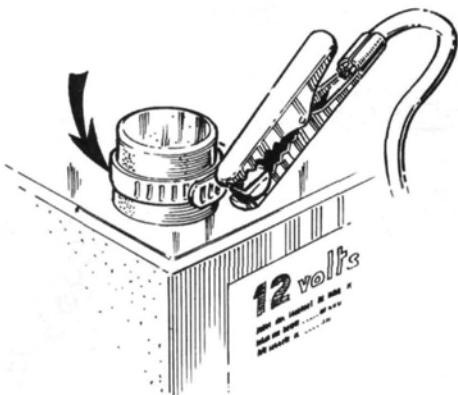
instead of a stock one, I usually had to tighten the friction slipper slightly.

So how did I do? Not bad; I qualified second in 2WD Modified and finished third; and I qualified third in 2WD Stock and ended up in third again. I'm not complaining!

Based on my day at the races, I definitely think that Team Losi's Hydra Drive isn't a gimmick. It worked as it was supposed to, and I noticed a difference in a car that I've been racing for almost eight months straight. Although more advanced racers will undoubtedly benefit from using it, I think that less experienced racers stand to gain the most from the Hydra Drive; it makes a car more

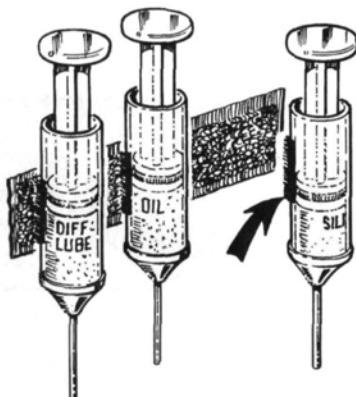
"driveable" and easier to set up. To sum up: if I had 140 Hydra Drive units at this race, I could have sold them all within an hour. Oh, and by the way, just so you know, Losi is working on adapters that will allow the Hydra Drive to be mounted on other brands of cars. Watch out!

*Here's the address of the company featured in this article:
Team Losi, 13848 Magnolia Ave., Chino, CA 91710. ■

**BATTERY POST ADAPTER**

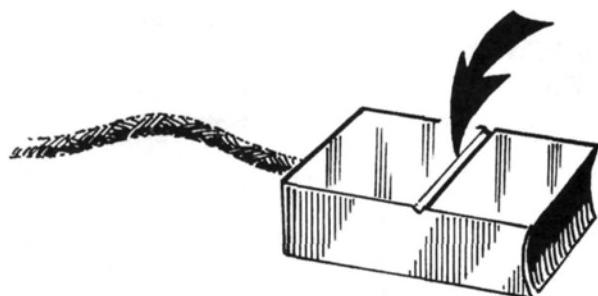
The posts of 12V car batteries are much too big for the small alligator clips that are used on Ni-Cd pack chargers. Instead of changing the charger's clips, pick up a couple of hose clamps (about 95¢ each), smear a little petroleum jelly around each post and clamp, then screw a clamp to each post. You can then grip the clamping screw with a standard alligator clip. The petroleum jelly stops corrosion.

Simon Quezada, El Paso, TX

**HANDY LUBE CENTER**

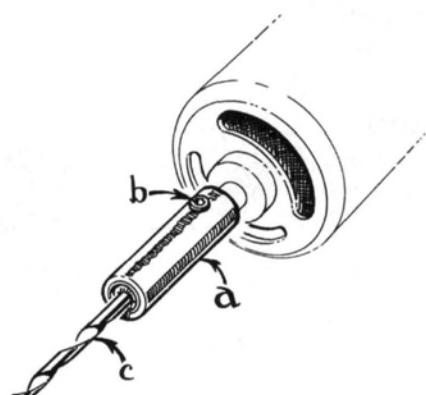
Put all your lubricants into syringes, then glue a small piece of Velcro® to each syringe. Glue the matching half of the Velcro® to your toolbox lid; all your lubricants will be close at hand.

Mark Thorsen, Asheville, NC

**BRUSH WEAR INDICATOR**

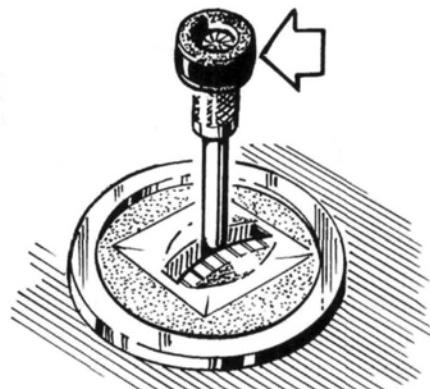
Scratch a little groove across each brush. When the groove disappears, you'll know that the brush is worn, and it's time to change it. You'll no longer have to remove brushes for inspection.

Zach Vonler, Denton, TX

**PORTABLE MINI DRILL**

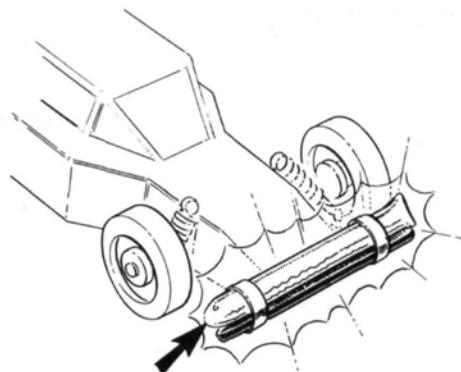
Insert small pieces of brass or copper tube into a piece of thick brass or copper tube (a) so that it can hold a small drill bit (c). Solder the tubes and the drill bit together, then drill a hole in the opposite end of the tubes to accept a small setscrew (b). This drill can then be fitted to a spare motor and driven by a Ni-Cd pack (controlled by your speed controller). You can make drills of many sizes for your pit kit.

Bill Ashley, Whittier, CA

**CONTROL-STICK COMFORT**

Control-stick tops can be rough enough to cause acute discomfort after a few hours of racing. Slip a couple of slot-car tires (or tires from an old toy) over the sticks for cushioned comfort.

Ryan Zarnowski, N. Plainfield, NJ

**NIGHTTIME RACING**

Attach a chemical light stick to your car's bumper with tape or rubber bands. It will give enough light for some exciting nighttime racing. Light sticks aren't easy to break, and they don't get hot.

Brendan Geiger, Castro Valley, CA

Radio Control Car Action will give a one-year subscription (or one-year renewal if you already subscribe) for each idea used in "Pit Tips." Send a rough sketch to Jim Newman, c/o **Radio Control Car Action**, 251 Danbury Rd. Wilton, CT 06897. BE SURE YOUR NAME AND ADDRESS ARE CLEARLY PRINTED ON EACH SKETCH, PHOTO AND NOTE YOU SUBMIT. Because of the number of ideas we receive, we cannot acknowledge each one, nor can we return unused material.





Off-road goes **BIG** **TIME**

by FRANK MASI

HAD NO IDEA what to expect. After Model Rectifier Corporation* (MRC) and Tamiya had parted ways, I knew that MRC planned to enter the R/C car market with its own line, and I thought that the company might do what so many others have done in the past—find a line of R/C cars that's being produced in some far-off country and bring it into the U.S. with a new label.

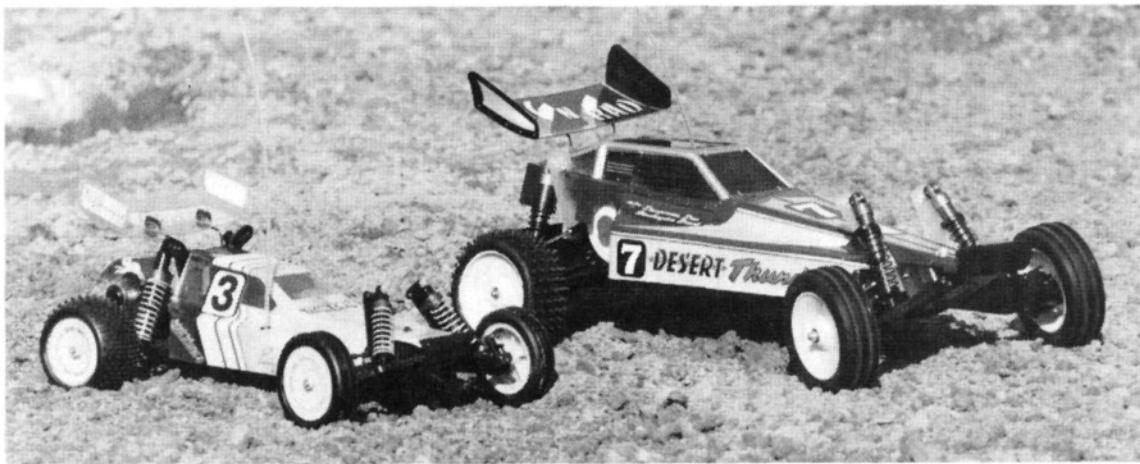
Nothing new, I thought as I strolled into the main lobby of Edison, New Jersey's Clarion Hotel. MRC had called a press conference to announce the release of its new World Scale

line, and a few of us from *Car Action* had been invited to witness this modern miracle.

"Man, I've got so much work to do back at the office," I whined to Chris Chianelli. "I can't believe they dragged us down here just to show us another relabeled 'toy' car." Chris offered his usual, enlightened insight. "Huh? Were you talking?" I should know better.

We headed to a large conference room to listen as MRC President Roy Gelber and project head Frank Ritota described what World Scale was all about.

"We need to bring back the entry-level market with a product that's bigger, easier to build



and to work on and more stable than what's currently available," said Gelber. "With the introduction of World Scale," he added, "the radio-control car hobby will never be the same."



Car Action's alleged editor, Chris Chianelli, is shown next to the Desert Thunder buggy and the Thunder King monster truck for scale purposes. See how much smaller Chris's head is in comparison.

OK, I was curious. I now knew that whatever World Scale was, it certainly wasn't $\frac{1}{10}$ scale. Could it be $\frac{1}{8}$ scale? Gas-powered? As we shuffled from the conference room into a large banquet room, my excitement increased.

WORLD SCALE UNVEILED

The center of the room had been cleared of furniture. In its place stood a very odd conglomeration of props: a large, dirt runway, an immense, plywood ramp, and most prominently, a cinder block wall, painted with bright colors—and with the word "pow" smack in its center!

I took a seat and waited for the show to begin. Ritota again took the podium, explaining the premise behind World Scale, and how it would revolutionize the R/C car industry. Okay, enough of this; I wanted to see the darn thing! As if in answer to my

thoughts, the lights dimmed and a deejay started spinning some funk rhythm that made me remember the old "Dance Fever" show. Just then, two men holding transmitters appeared to my right.

"Ladies and gentlemen," said Ritota, "MRC is proud to introduce its World Scale!" At that moment, two R/C vehicles accelerated from where they had been hidden, blurring past the audience as the deejay picked up the tempo. As the vehicles passed my seat, I was able to get a closer look. One of them was an off-road buggy, and the other was a monster truck; but they weren't like anything I'd ever seen before. They were immense!

For the next 15 minutes, we were treated to an awesome display of performance and durability. The vehicles were put through every conceivable maneuver and subjected to some pretty punishing torture tests (the pinnacle came when the monster truck was driven full speed into the cinder blocks—repeatedly, without damage!).

INSIDE WORLD SCALE

When the festivities had concluded, I finally had the chance to examine the new vehicles in more detail. The full World Scale line includes the Desert Thunder off-road buggy, the Thunder King monster truck and the Baja King stadium-racing truck. Although MRC was hesitant about disclosing the true scale of its new vehicles, I estimate that they're bigger than $\frac{1}{8}$ scale—about $\frac{1}{7}$ scale, you might say.

The World Scale vehicles share many features. Among them: a black-anodized, aircraft-aluminum alloy chassis that's channelled and formed to

Above: you can see the difference between the Desert Thunder buggy and a typical, $\frac{1}{10}$ -scale, off-road racer. Their size makes the World Scale vehicles supremely stable.

"...we were treated to an awesome display of performance and durability. ...the pinnacle came when the monster truck was driven full speed into the cinder blocks—repeatedly, without damage!"

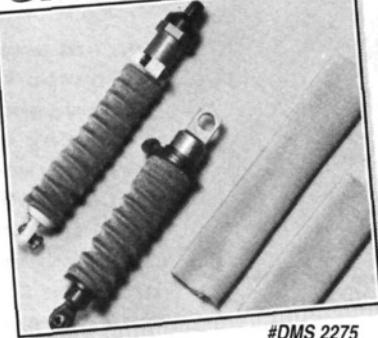


The Desert Thunder has the same chassis—made of aircraft-aluminum alloy and channelled to increase strength—as the rest of the World Scale line. The only major difference among World Scale vehicles is the size of the tires and wheels. The adjustable battery mount allows the use of a variety of pack configurations.

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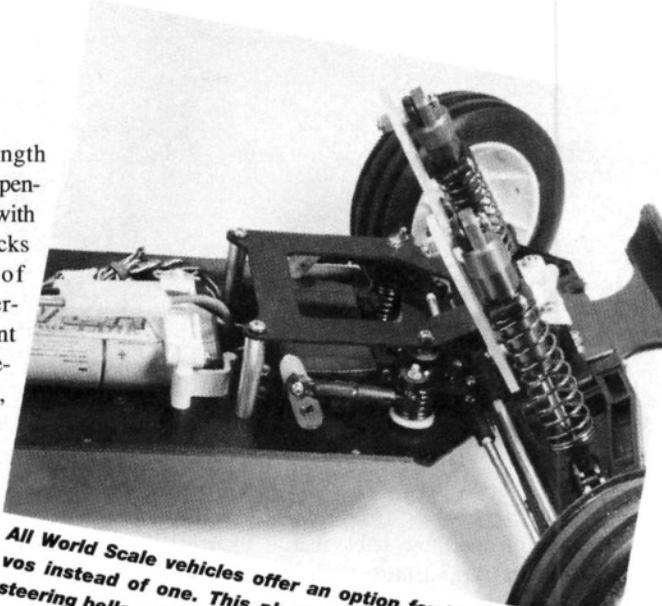
WORLD SCALE PREVIEW

provide maximum strength and rigidity; a fully independent A-arm suspension with oil-filled, coil-over shocks (aluminum-bodied, of course); and thick, fiber-glass shock towers front and rear. Like most race-oriented, $\frac{1}{10}$ -scale cars, the World Scale vehicles offer a multitude of camber-rod and shock-absorber mounting holes with which you can tailor handling characteristics to suit running conditions.

As it is in any car or truck, the heart of World Scale vehicles is the transmission. All three have a three-gear, ball-bearing-supported tranny that incorporates not only a race-ready ball differential, but also a slipper clutch. These vehicles look as if they were designed with competition in mind!

Vehicles of this size would be underpowered using conventional 540 motors and sub-C batteries, so to remedy this, they have not one but *two* motors bolted to the tranny to increase top speed as well as torque.

One of the more interesting features of the



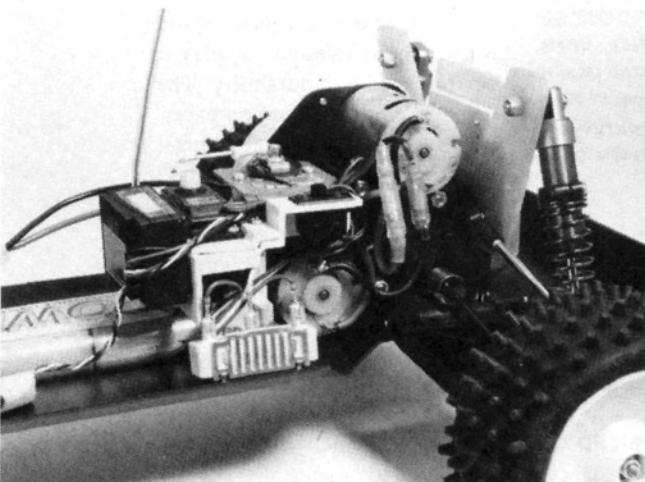
All World Scale vehicles offer an option for two steering servos instead of one. This photo shows the dual setup. Twin steering bellcranks are used, each with its own servo-saver.

buggy

and the trucks are the size of their tires (the trucks use wider, larger tires and wheels), and the bodies. The Baja King stadium truck is the top-of-the-line World Scale ride; it has full ball bearings (the buggy and the monster truck use bushings at all four wheels) and a low-slung, racing-truck body.

The World Scale vehicles were whisked away before I could *really* get a look, but not before I was able to note a few more interesting

features: a three-step mechanical speed controller with reverse; a super-trick battery-mounting system that allows the use of a variety of pack configurations, e.g., 6-cell, 7-cell flat and hump packs; a large and very effective front bumper to ward off even the harshest blows; and stunningly detailed polycarbonate bodies.



The World Scale tranny is state-of-the-art with a ball diff and slipper clutch as standard equipment. Power is provided by two Mabuchi 540 motors.

World Scale vehicles (aside from their size, of course) is their twin steering bellcranks with built-in servo-savers. This well-designed setup gives owners the option of using two steering servos instead of one for increased torque and stability. If you want the trucks, you should consider this option, but the buggy looks as if it will fare well with just one servo.

The primary differences between the

both trucks on MRC's test track, I was equally enthusiastic. They're incredibly stable and sure-footed, even over large obstacles and grass. Peak Performance driver Derek Furutani summed it up best: "Man! Where's mine?" Look for in-depth track reports on all three World Scale vehicles in upcoming issues of *Car Action*.

Here's the address of the company that's featured in this article:
MRC, 200 Carter Dr., Edison, NJ 08817.



HOW TO

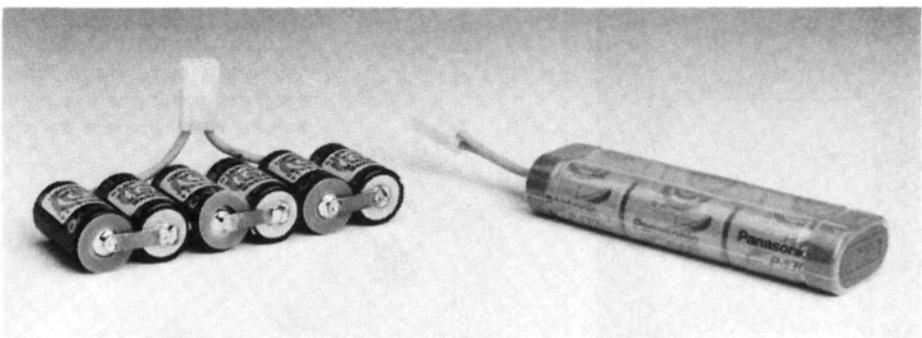
Pack it in!

YOU NEVER GIVE yourself enough credit. You're an intelligent creature, capable of learning a great many things. So why are you afraid to assemble your own battery packs? Come on, you know who you are! You're the guy at the hobby shop who always buys assembled packs when all your friends buy single cells and build their own. If you plan to be involved in the R/C hobby for a while, you'll have to learn how to wield a soldering iron sooner or later. What are you waiting for? Building your own pack is much easier than you may think, so come on! Grab your cells and follow me. I'll show you a few tricks that will make you scratch your head and wonder why you've been roughing it for so long.

PHOTO BY WALTER SIDAS

by FRANK MASI

Assemble Batteries



WHAT YOU'LL NEED

Once you've selected a soldering iron, determine what type of pack will suit your needs and fit into your R/C car or truck. Basically, there are two types of battery pack: stick packs, in which the cells are arranged end to end; and side-by-side packs, in which the cells are joined at their sides.

The type of pack you choose to make will determine which other items you'll require to complete the assembly. For side-by-side packs, I use Trinity's saddle-pack building kit (no. RC 5104). It includes everything you'll need: individual cell shrink-wrap (to protect the cells' original shrink-wrap); CU 64 copper battery bars (to connect the cells); battery washers (for use on the cells' positive terminals to

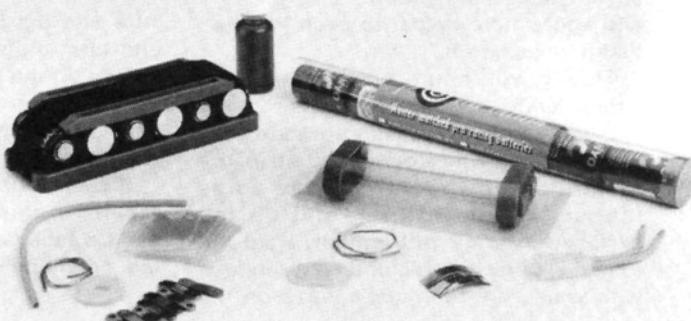
CHOOSING AN IRON

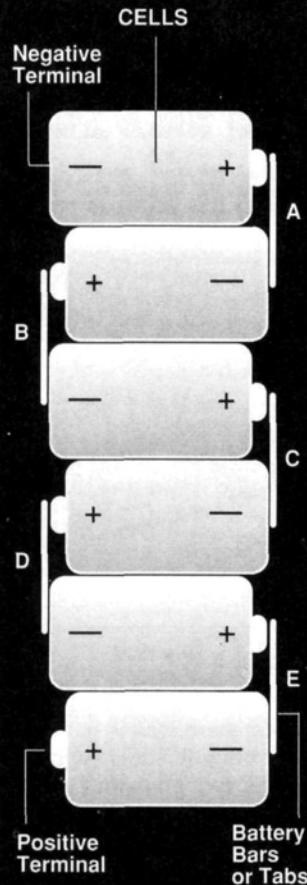
As with any project, having the right tools and equipment makes your work much easier. Right off the bat, you'll need to buy (or borrow) a good soldering iron. There are many types available, so it shouldn't be hard to find one that fits your budget. My favorite is the Ungar^{*} Super Race Station; it has its own thermostat for precise temperature control and a base that contains a tip-cleaning sponge. If you operate your R/C car where AC power isn't available, you might want Ungar's 12V Super Iron; it works from any 12V power source, such as a car battery. Inexpensive irons such as the Weller^{*} 40W get really hot, but their tips don't last long.

The most important features of an iron are its wattage and its operating temperature. You'll want an iron that can reach a temperature of 600 to 750 degrees Fahrenheit. The hotter your iron, the less time it will take to make a good solder joint, i.e., the less time the iron will touch the cell and heat it. Heat is a Ni-Cd battery's worst enemy. Wattage is equally important because irons with higher wattage will heat up more quickly; more important, they'll maintain their temperature better than less powerful irons.

prevent shorting); and a length of 13AWG wire.

Trinity also makes a stick-pack building kit (no. RC 5102) that comes with tabs (to connect the cells); a "shotgun" battery tube (to keep everything in place); plastic endcaps; a Tamiya-style connector with leads; and shrink-wrap. Both kits come with solder, but I prefer to use Archer 60/40 rosin-core (available from Radio Shack) because it seems to make better joints. Additional, not essential, items include rosin soldering flux, which helps the solder to adhere better; a pair of needle-nose pliers to hold hot soldering jobs; and a cell-holding jig (I use the Battery Claw from S&K^{*}) to hold the cells in place as you solder them.





Note: when building stick packs, bend tabs A, B, D, and E, but not C

AVOID POLARITY PROBLEMS

When you begin to assemble your own batteries, one thing becomes extremely important: cell polarity. To work as a pack, cells must be attached in series; this means that the pack must have one positive terminal and one negative. Each cell's negative side is connected to the next cell's positive side. Think of the pack as one big cell, and you'll have no problems.

Building Side-by-Side Packs

Side-by-side packs are easier to build than stick packs. First, protect each cell with shrink-wrap. (A hair dryer works well to shrink the wrap.) Next, place the cells together in the desired configuration (this is where a battery-holding jig comes in handy) so that you can solder them together. The nice thing about thick battery bars, such as the CU 64s, is that their rigidity makes it unnecessary to glue the cells together. If, however, you use braid or thinner battery bars, you must glue the cells with thick CA.

TINNING THE CELLS

When you're ready to fire up your soldering iron, tin the ends of each cell (both positive and negative sides—but you knew that) with solder. Here's where the rosin flux is useful. Apply a little to each cell with a small paintbrush, then hold the tip of the iron against the area while you apply solder. Remember to remove the iron as soon as the solder spreads, or you'll damage the cell. You just want to coat the ends of each cell with a thin layer of solder; this will make it easier to attach the battery bars and wires.

ATTACHING THE BARS AND CONNECTOR

Soldering the bars onto the cells is probably the hardest part of battery building, and even *this* is easy! One way to solder the bar is to tin its ends and hold it in place with needle-nose pliers as you solder. The other way is to lay the bar on the tinned cells and, without moving the bar, touch the iron to it and heat it as you apply the solder. Both methods work; the important part is to attach the bars firmly to the cells. After I've attached the bars, I usually go back with my iron and apply more solder to each joint (so that it looks good).

Finally, you must attach either connector leads or solder tabs. (Use tabs if you plan to hard-wire your packs to your ESC.) For connector leads, strip the insulation off the ends of the wires (about $\frac{1}{4}$ inch is fine), and tin the exposed strands with solder. Hold the tinned wire to the cell, and heat the area with your iron; the solder that's on the



wire and the cell should flow together and form a strong joint. To attach tabs, simply tin the ends of two pieces of battery braid or a battery bar, and solder one to the pack's positive end and one to its negative.

Side-by-side packs are used by most racers. In this configuration, the cells can be easily disassembled for rematching, conditioning and reconfiguring.

Building Stick Packs

Stick packs are usually made of unmatched cells that are assembled by the manufacturer (either Sanyo or Panasonic). You can, however, make your own stick packs using matched batteries. Stick packs are the only type that fit in certain cars or trucks. (Side-by-side packs are a little longer than stick packs.)



FORMING THE STICK PACK

After you've soldered the cells together, remove them from the battery-soldering jig and bend the tabs so that the cells are arranged end-to-end: bend the tab in its middle so that, from the side, it resembles an "m." Simply push the cells together so their ends sandwich the tabs. You should now have two rows of three cells.



ATTACHING THE TABS

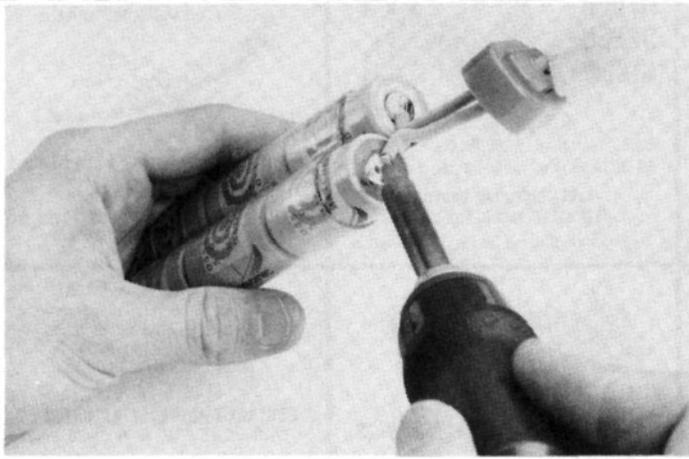
To assemble cells into a stick pack, tin each cell as if you were building a side-by-side pack.

Again, I use my S&K Battery Claw to hold the cells in place, but instead of battery bars, I use thin, flexible tabs. The reason for the tabs is simple: the cells are aligned end to end; if the connecting material isn't as thin as possible, you'll have a pack that's too long to fit into your car!



HOLDING THE CELLS TOGETHER

The rigid, plastic "shotgun" tube in Trinity's kit holds the cells in place. Slide the tube over the cells and center it. It will prevent the batteries from coming apart if the car crashes or is jolted harshly.



THE FINAL TOUCHES

It's time to attach the connector to the soldered cells. If you plan to use endcaps on your stick pack, thread the connector's leads through one of the caps before you solder the leads to the battery. Place the remaining cap on the other end of the pack, then slide the large shrink-wrap over the entire assembly. Be sure that an equal amount of wrap extends past both ends of the assembly. Use a hair dryer to heat the shrink-wrap until it conforms perfectly to the pack. You've finished!

CONGRATULATIONS!

See? It wasn't that hard, was it? With your new skills, there aren't many soldering jobs that will be too tough for you to handle. What's more, with each pack that you build,

your confidence will rise; pretty soon, you may be the one writing these "how-to" articles for *Car Action!*

*Here are the addresses of the companies mentioned in this article:

Ungar: distributed by Horizon Hobby Distributors, P.O. Box 3726, Champaign, IL 61826.

Weller/Cooper Tools, P.O. Box 728, Apex, NC 27502.

Trinity Products Inc., 1901 E. Linden Ave. #8, Linden, NJ 07036.

S&K Racing Products, 215 S. Market St., Oskaloosa, IA 52577.

HOME-BUILT PROJECT

MID-MOTOR MANIA!



HOW MANY of you have thought to yourselves, at one time or another, "Those guys at Losi and Associated don't know how to design a race car; I could do a much better job"? And how many of you have actually tried to create something better? Not many, I'm sure, but Eric Pringle of Long Beach, CA, is an excep-

tion. He created a car that he thinks is better than anything that's commercially available.

INSPIRATION

Eric was inspired by one of Joel Johnson's cars—an Ultima in which the transmission had been installed backwards and the motor had been positioned in the middle of the chassis. This struck Eric

Stealth Mid

by ALEX STROUHOPOULOS

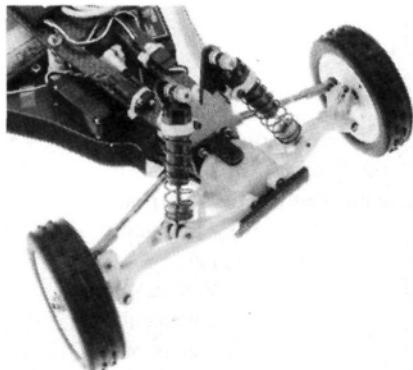


PHOTOS BY WALTER SIDAS

STEALTH MID

as a great idea because, for better weight distribution, the engines in all the great road-racing cars (Ferraris, F1s, GTPs, etc.) are in a "mid-motor" location, i.e., behind the passenger compartment, yet still in front of the rear axle.

Eric wanted to give his Associated* RC10 a mid-motor configuration, but this meant that he would have to install its MIP tranny backwards—a setup that would require the use of a reverse-wind motor. Eventually, he gave up on the idea, because he couldn't find a good selection of reverse motors.



The front end has RC10T A-arms, caster blocks and steering arms as well as a Delrin bulkhead and a fiberglass shock tower that were custom-made. Eric uses Tecnacraft's new, extremely strong, 6-40 tie rods and ball ends.

The release of the Stealth tranny, however, solved this problem. (It doesn't require a reverse-wind motor when it's installed backwards.) Eric decided to try again and, this time, he had even more ideas. He also planned to use long A-arms like those he had seen on the Stealth car that ran at the Worlds.

PERSPIRATION

First, Eric bought an RC10T kit, which came with long A-arms and a Stealth tranny. He assembled what he could, and then he called Dave Inkel at DA Graphite* and ordered a custom chassis. Next, Eric visited two companies in his area: Advanced Plastics and Composites, where he bought some Delrin stock, and Frenchy's

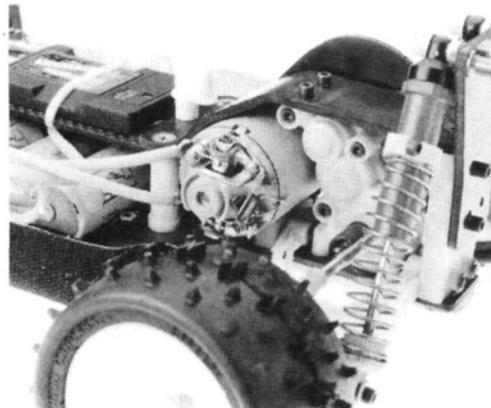
Machine Shop, where he had the Delrin machined to fit his specs for front and rear bulkheads that would accommodate the long arms. Eric also custom-made a fiberglass shock tower and an upper brace (out of a piece of Parma* graphite). The car's finishing touches include Tecnacraft* 6-40 rods and ball ends, an SCI* Power Card 1000 speed controller, Corally* battery trays with PTI* Panasonic P-170 cells glued into place and a Futaba* radio system.

RESPIRATION

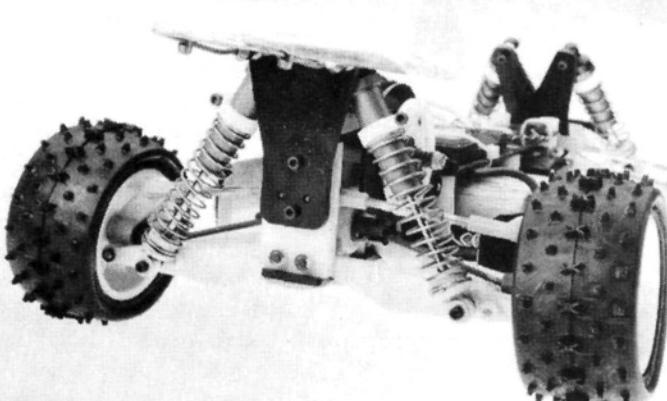
On the whole, Eric is satisfied with his creation. It performs well and seems to be pretty tough. He admits, however, that he still has to solve a few problems. He can't adjust the gearing easily because the rear suspension mount sits right below the motor (preventing downward movement) and the upper brace rides right above the motor (preventing upward move-

ment). Whenever he wants to adjust the gearing, he has to replace both the pinion gear and the spur gear! In addition, the kit's

Eric used RC10T suspension parts and scratch-built components to create his own version of the Stealth car.



Eric installed the Stealth tranny backwards so that he could use a mid-motor configuration. The only problem is that there isn't enough room to move the motor when adjusting the gearing.

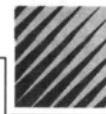


The rear end has RC10T A-arms, shocks and hub carriers, all of which are attached to a custom-machined rear bulkhead and shock tower. Note how close the rear hinge pins are to each other!

dogbones are too short, so Eric has had to reduce the car's rear suspension travel slightly to prevent them from falling out. Eric followed through with his plan to create a car that he can call his own. Almost every part was custom-made or modified to fulfill his design requirements.

Perhaps Eric has inspired some of you to create your own scratch-built race cars!

*Here are the addresses of the companies mentioned in this article:
Associated Electrics Inc., 3585 Cadillac Ave., Costa Mesa, CA 92626.
DA Graphite, 1235 Portola Ave., Spring Valley, CA 91977.
Parma Int'l. Inc., 13927 Progress Pkwy., Royalton, OH 44133.
Tecnacraft, 1335B Dayton St., Salinas, CA 93901.
SCI Corp. of America, P.O. Box 13099, Sarasota, FL 34278.
Corally; distributed by Du-Mor R/C Inc., 1002 Union Landing Rd., Cinnaminson, NJ 08077.
PTI, P.O. Box 4648 Winston-Salem, NC 27115.
Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718.



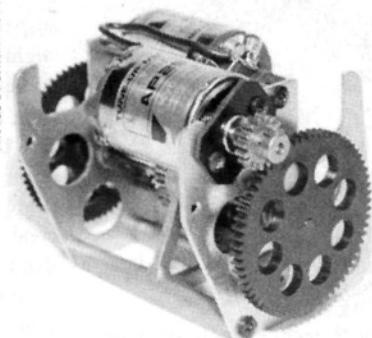
TRUCK STOP

TREAD TRICKS!

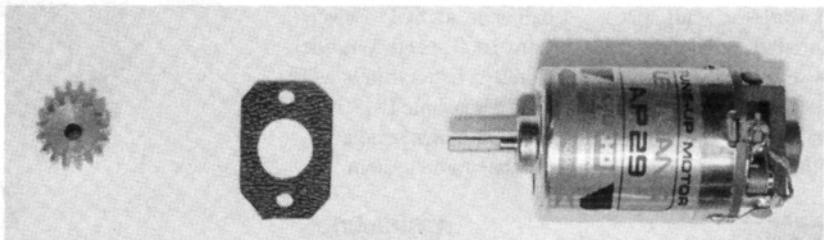
by DAVE SPROUL

HELLO, AGAIN, from the "Truck Stop"! Unfortunately, this is the last "Truck Stop" column that I'll write. Due to other responsibilities and projects, I've been forced to "retire," so to speak. The past two years of bringing you news, product reviews, ideas and information on the R/C trucking hobby have been enjoyable. However, lately, I haven't been able to devote the time to writing the quality column that I think *Car Action* readers deserve, so it's time to go. I sincerely appreciate those who have offered support and encouragement.

PHOTOS BY DAVE SPROUL



Kyosho AP-29 motors can be adapted for use in the Heavy Metal gearbox with a few modifications. The black Kydex motor plate is easy to make. (See the drawing below.)

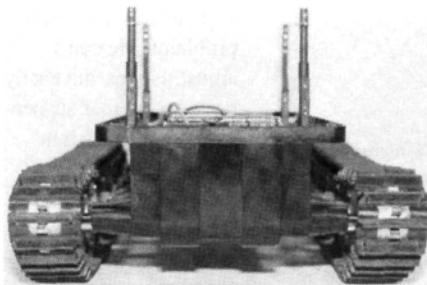


A 16-tooth pinion, a custom motor plate and a Kyosho AP-29 motor.

TRACK ATTACK

I've frequently been asked how to modify a Kyosho* Heavy Metal tank (or Blizzard Snow Cat), so this month's column will deal with some relatively easy upgrades. You'll be surprised by how much you can improve performance with very little effort.

First, replace the wheel bushings and the output drive-axle bushings with Kyosho's ball bearing kit (no. KYOC 2225). If you have the Blizzard kit, you'll have to use the Heavy Metal



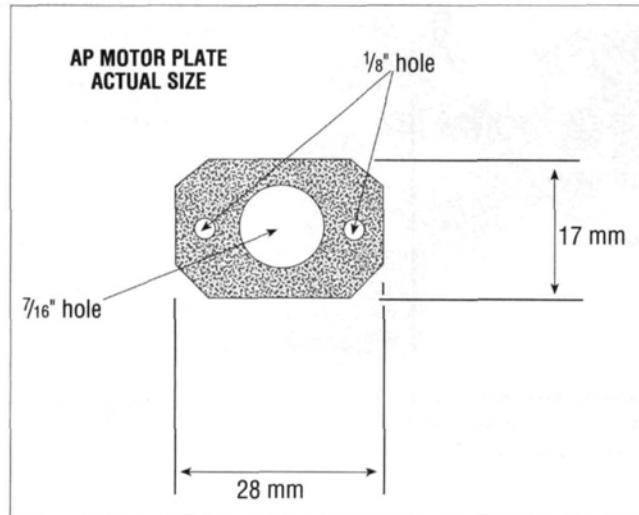
In this rear view of the chassis you can see the narrowed, realistic tracks.

wheels, because the Blizzard wheels can't accommodate bearings. To improve performance and make these kits more durable, bearings are must-have items.

increase speed by reducing rotating mass. Although this modification can cause the track to fail prematurely, I've had few problems.

Now, on to the serious horsepower changes. I've slapped on a pair of 05-size motors before, but this is very difficult and requires extensive mods. A much easier—and just as effective—solution is to use Kyosho's AP-29 and AP-29R modified motors. They're only slightly larger than the stock motors, but they'll provide substantially more power. You'll have to make a new motor-mount plate (see the drawing) and, perhaps, file the gearbox side plates slightly, but neither is difficult to do.

I made the motor plates of $\frac{1}{8}$ -inch-thick ABS (Kydex) plastic sheet; $\frac{1}{16}$ -inch aluminum would work equally well, but it's harder to cut. You can use standard 32-pitch pinion gears (16-tooth recom-



TRUCK STOP

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T.D. Groove Charts

Direct drive tire rollout charts for on-road and dirt oval. They help find the speed groove and keep you there by showing when to change the pinion as rear tire diameters change. 2 charts per set for 1/10 or 1/12 - \$5.00* per set

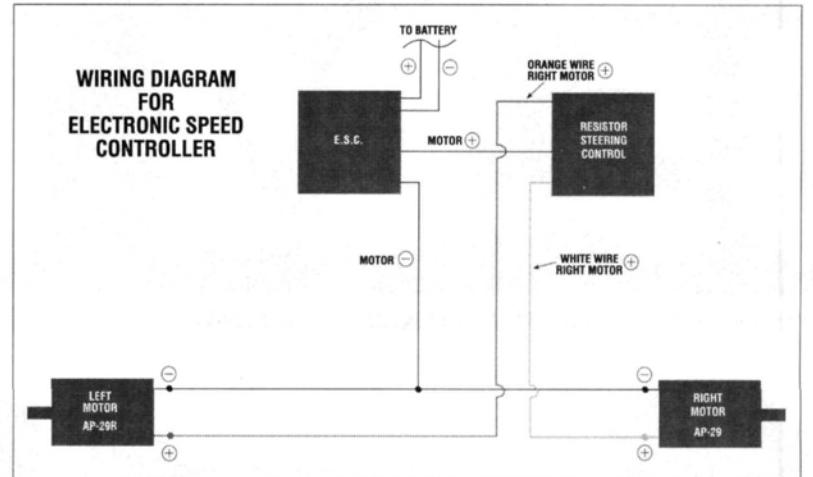
T.D. Global Gear Charts

The most thorough direct drive gear ratio charts available. Ratios for almost every gear on the market! 64 pitch or 48 pitch - \$3.00* each

Orders only call: 1-800-253-7229

Payment is M/C / Visa or send check or M/O to:
T.D. Enterprises P.O. Box 3301, Lexington, Ohio, 44904
(checks require 2 wks crncc). For customer info and dealer inquiries, please call (419) 884-2004.

*FREE shipping in contn'l U.S.A., no cod. OH res add 6%

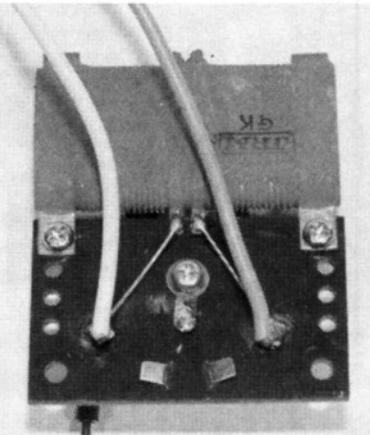


The Heavy Metal's stock steering controller can be used with an electronic speed controller if they're wired correctly.

mended), but they won't match the metric-pitch spur gears perfectly. To "run-in" the gears, I set the gear mesh so that it was tight, and I ran the motors at full throttle (using a 6-cell battery) without a load on the gearbox (I removed the tracks). This sounds a little crazy, but it worked.

After I had installed the motors, I added a little extra juice with a 7-cell battery pack. (You'll have to modify the chassis to use stick packs, but 7-cell hump packs will fit nicely.)

To improve throttle control, you can replace the resistor-type speed controller with an electronic unit (Novak's 610RV is a good choice), but you must retain the steering-resistor controller. Pay close attention to the wiring diagram shown; a mistake here could be expensive! Using a good soldering iron, remove all but the orange and white wires. (These will go to the motors, as indicated.) Next, solder the speed controller's positive wire to the center position on the back of the steering controller. Check the wiring against the

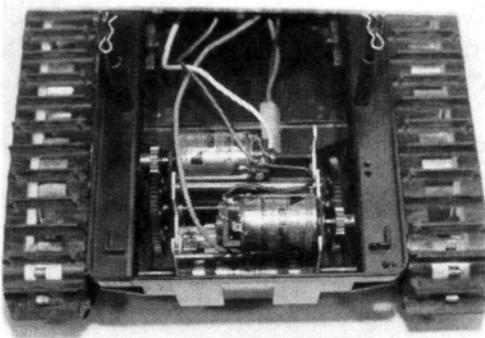


A rear view of the stock steering controller. The orange wire is on right; the white one is on left.

diagram before you connect the battery.

These modifications may not enable your tank to keep up with a good monster truck, but they'll double its speed and provide lots of "wheel-standing" fun.

Well, that's all for this "Truck Stop." Last time, I promised you an update on gas trucks, but I couldn't collect all the information I needed; I apologize. It's been nice, fellow truckers. I'd say good-bye, but I plan to write features and cover races for *Car Action* from time to time. Until our paths cross again, keep on truckin'!"



The motors and the gearbox installed in the chassis tub.

**Here's the address of the company featured in this article:*
Kyosho/Great Planes Model Distributors, P.O. Box 4021, Champaign, IL 61824. ■

CAR ACTION
TRACK REPORT

Jump
into
the big
leagues.



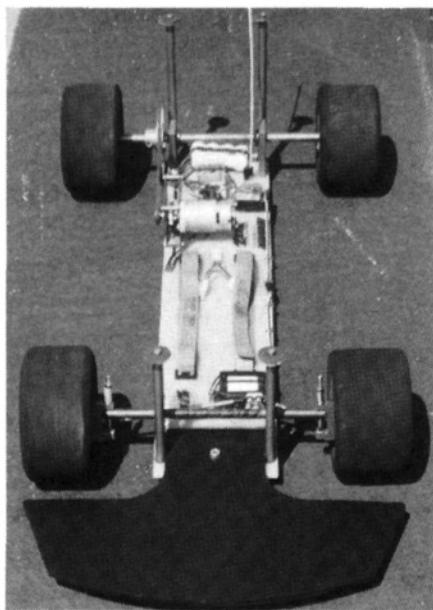
QUARTER-SCALE cars have always fascinated me. In terms of realism and visual appeal, the sheer size of these R/C giants puts them in a class by themselves. But many racers—including me—have been reluctant to jump into $\frac{1}{4}$ -scale because of the expense and the unfamiliar, large, gas engines that power most of these beasts. But what if you could get one of these monsters to run on electricity, using your old familiar Ni-Cds and a big electric motor? And what if this car cost less than \$600?

FINE DESIGN

by MIKE OGLE

electric $\frac{1}{4}$ -scale **NASCAR**

Well, that's exactly what the guys at Fine Design Manufacturing* have come up with—the first electric $\frac{1}{4}$ -scale oval racer! This car is a product of their imaginations and their knowledge of big electric motors and multi-cell batteries. (Fine Design, as you may know, is the leading manufacturer of R/C drag-racing equipment.)

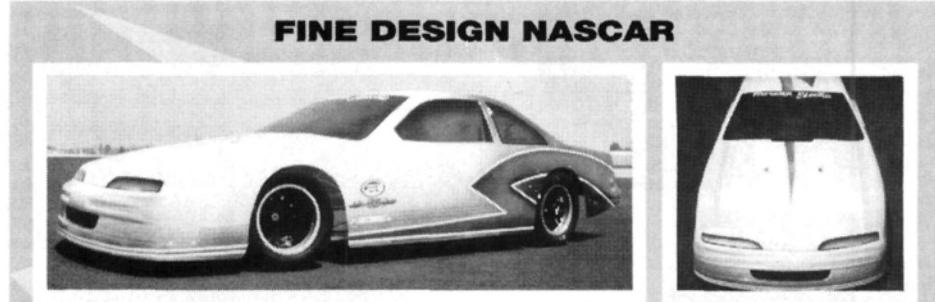


This large Kydex bumper keeps you out of trouble and supports the nose.

The car is equipped with a motor, a unique gear/belt-drive system, foam tires on black plastic wheels, an ABS body (a Lexan body is available for an additional \$55) and blue- or gold-anodized aluminum parts. It's 90-percent factory assembled, so all I had to do was paint and mount the body and install the radio gear and a speed controller.

I chose the Lexan body, and painting it was my first task. There were two notable differences between masking and painting something this big and doing the same to a $\frac{1}{10}$ -scale body: I could practically get inside this one to mask it off; and it took a lot of paint! Figure about four to six cans for a basic NASCAR paint job—more if you're going for something elaborate. You may want to use heavy-duty tin snips to trim the body; the Lexan is much thicker than that used for $\frac{1}{10}$ -scale bodies, so it's difficult to cut with regular scissors. The body is mounted on the chassis with machined-aluminum body posts (included) that fit the Thunderbird body perfectly—no juggling collars or spacers.

The car's chassis is G-10 fiberglass, and



FINE DESIGN NASCAR

Type Electric-powered stock car
Scale $\frac{1}{4}$
Price \$595

DIMENSIONS:

Overall length 46 inches
Width 19.5 inches
Wheelbase 25 inches
Front track 17.5 inches
Rear track 18.5 inches

WEIGHT:

Gross (with battery) 17 pounds, 1 ounce

BODY:

Type NASCAR T-Bird
Material ABS or Lexan*

CHASSIS:

Type Flat pan
Material G-10 fiberglass

DRIVE TRAIN:

Primary Belt drive
Transmission Gear
Differential(s) None
Bearings/bushings Full bearings

Suspension:

Front: Type Beam with floating steering arms
Damping Adjustable spring rate
Rear: Type none
Damping none

WHEELS:

Front: Type Black plastic
Dimensions (DxW) 3.25x6.25 inches
Rear: Type Black plastic
Dimensions (DxW) 2.25x6.25 inches

TIRES:

Front/Rear Foam tires (medium)

ELECTRICS:

Motor Fan-cooled Mabuchi RS 775VF
Battery 12-cell 1700 SCRs**
Speed Controller PDI Drag Turbo Zeta**

OPTIONS AS TESTED:

PDI Drag Turbo Zeta speed controller with reverse, Lexan body, 12-cell 1700 SCR pack.

* Optional Lexan body is an additional \$55

** Not included

HITS

- Environmentally friendly electric power • High degree of adjustability for race-tuning
- Full ball bearings • Easy to see and to drive • Comparatively inexpensive way to get into $\frac{1}{4}$ scale

MISSES

- Not as quick as its gas-powered brethren • Large number of cells required for operation; can become expensive

with the protection of a huge Kydex bumper, it's practically indestructible. The front end is a larger version of a TRC-style aluminum-beam front end. It has pinch blocks for adjustable caster, and setscrew-adjustable collars over each kingpin to tune the spring tension on each front wheel. The large motor has a built-in fan for cooling. The blue-anodized motor-mounting bracket allows you to use one or two motors. The rear end of the

car houses the gear/belt-drive system: the motor's pinion gear drives a jackshaft that uses a belt and pulley to turn the solid rear axle. It's all fully ball-bearing-equipped, of course!

Fine Design sent me a PDI* Zeta Drag Turbo speed controller. It's programmable, can handle up to 32 cells, and has a reverse circuit that uses three to seven additional cells. I used a 12-cell pack of the new 1700

IMPORTANT NOTICE FOR LXT AND RC10T RACERS.

Like many electric model drivers, you may be experiencing short run times, limited power and difficulty competing with sponsored racers.

Solve these problems permanently by converting to nitro power using the new DuraTrax Gas Truck Conversion Kit.

You'll immediately enjoy full-scale racing's sights, sounds and smells...virtually nonstop run times...speeds surpassing the hottest electric set-ups...and evenly-matched contests where ALL drivers have the power to win. See the full-color ad at right for details.

Limited time offer! Buy your DuraTrax Gas Truck Conversion Kit today...and get your fuel free!

WE'LL BUY THE NITRO.

Purchase your DuraTrax Gas Truck Conversion Kit before February 28, 1993, and we'll buy your first gallon of fuel (up to \$15.00).

Simply send this coupon along with your cash register receipt, showing your Conversion Kit and fuel purchase (circle the fuel price, please), plus the box end panel showing the stock number of the Conversion Kit purchased.

Name _____

Address _____

City _____

State _____ Zip _____

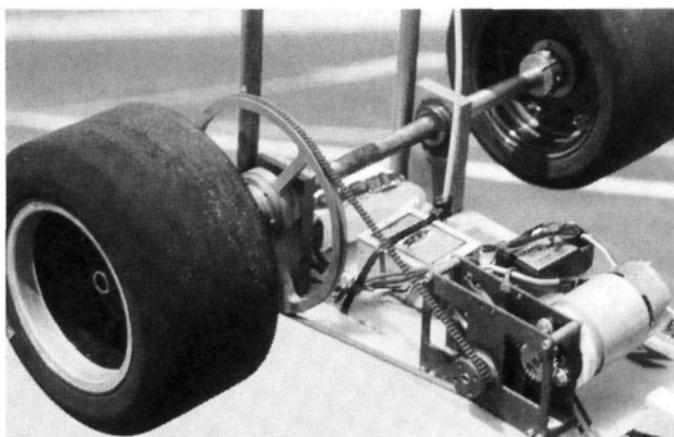
Maximum rebate: \$15.00. Offer good only in the USA. Limit one rebate per person or household. Request must be postmarked by March 15, 1993. No photocopies accepted. Fraudulent requests will be prosecuted. Offer void where restricted or prohibited.

Send rebate request to:

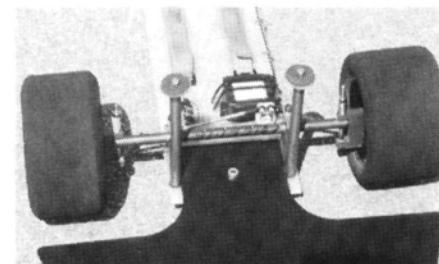
DuraTrax Free Fuel Rebate

P.O. Box 9021

Champaign, IL 61826-9021



The rear drive system has a large belt-drive pulley and a motor-mounting bracket that contains the adjustable gearing. The car doesn't use a differential, but one's "in the works."



The front end is like a 1/10-scale car—just bigger! All the aluminum parts are blue-anodized.

Sanyo SCRs, and a 4-cell pack for reverse. Although this setup delivered over 7 minutes of run time, Fine Design includes a Y-harness so you can hook up two battery packs in parallel. This will give you 14 minutes of fun runnin'!

After I had attached the body and checked the whole car, it was time to see how it would perform. Luckily for me, the local park had recently installed a huge tri-oval track—with a drivers' stand—for 1/4-scale cars, and I knew it would be deserted on a Wednesday morning. So, I charged up a couple of 12-cell packs and headed out.

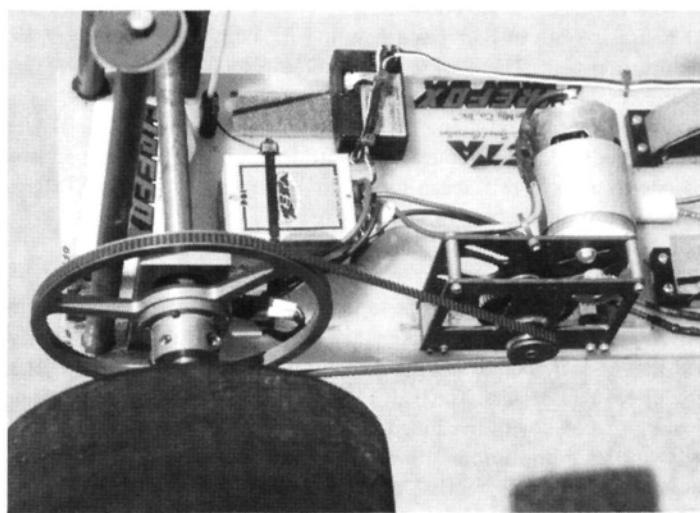
The first thing that hit me was the lack of noise that's usually associated with 1/4-scale cars. With its electric motor and belt drive, this one was really quiet! And, because it didn't use a clutch like a

gas car, it got up to speed quickly. Its top speed was as good as most gas-powered 1/4-scale cars. At first, the car spun out if I punched it out of the corners, but with a few more degrees of caster and a tightened right front spring—typical 1/10-scale tuning tricks—it was much more well-behaved. When I added a rear spoiler, it was dialed!

After a few runs, I decided to up the gear ratio to a 26:56 gear set, and the difference was very noticeable in top-end speed (clocked later at 23 to 26mph and still accelerating), with only a small decrease in run time. Because of its size, the car didn't look as if it was going as fast as it was.

Even though I tested the car in stock form, it was a blast to drive. If you added more cells, or a large cobalt motor (or two!), and some capped tires, I bet it would be a serious contender in the 1/4-scale electric racing class—if such a class existed. With so much discussion of gas versus electric power, Fine Design offers this unique 1/4-scale option. If you like 1/4-scale cars but you're more accustomed to electric power, now you have no excuse for not jumping into the "big league"!

*Here are the addresses of the companies mentioned in this article:
Fine Design Mfg., 2 North St., Middletown, NY 10940.
PDI, 16922 N.E. 124th St., Redmond, WA 98052. ■



PDI's Zeta Drag Turbo speed controller has both forward and reverse capabilities. High-performance fans can add a second motor.

SCHUMACHER

CHUMACHER'S STORM

by STAN VANDRUFF

SCHUMACHER'S* STORM is respected by veteran R/C truck racers; it's based on the race-winning technology of the BossCat and the Cougar. If you want to get into truck racing, but your funds are limited, the Storm's little brother—the Club 10—may be just what you need.

Schumacher goes to great lengths to make

the components of its kits compatible, and the Club 10 is a prime example. You can get it as a truck or a buggy (one set of instructions works for both), and you can convert from truck to buggy—or a rally-cross car—by changing just a few parts. When the racing bug bites hard, you can upgrade to a full-fledged Storm by adding an anodized chassis,

become a



a Pro diff, a slipper clutch, hard-anodized shocks, ball bearings and high-performance suspension arms. You get the idea.

THE KIT

The Club 10 is aimed at first-time racers, but I don't recommend it as a first kit because there were too many mistakes in the instructions. The people at Schumacher said that they knew about the errors, but the manuals

had already been printed. I hope they add an errata sheet until new manuals are printed.

The well-made kit includes some nice touches. Turnbuckles are used throughout, and the aluminum-pan chassis is quite rugged. The tranny uses a Kevlar belt on flanged pulleys. Bronze bushings are used everywhere except the front spindles; here, Schumacher provides sealed ball bearings for increased durability and steering precision.

member

As with a true competition truck, the Club 10 has all the adjustments you could want. Front kick-up angle (caster), front and rear camber and toe-in, variable shock damping and ride height can each be set to your liking. The only thing missing is an assortment of springs (they're available as an option, though).

ASSEMBLY

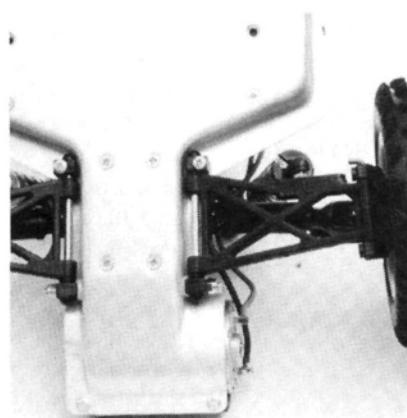
I'll give you some advice that I wish I had followed: look over *everything* in the kit before you start, and read the instructions at least three

steps ahead. Several instruction steps are out of order, and pages six and seven are completely reversed. Most of the parts are bagged logically, but it wasn't until I had spent 15 minutes carefully sanding the shock pistons to size that I found a bag marked "improved-fit shock pistons." And you'll need to open the speed-controller bag to get the hex wrenches long before you get to the speed-controller stage.

If your kit is missing parts (mine was), you won't find an American address or telephone number in the kit. Schumacher wants you to see your dealer if you have problems, but if you get in a pinch, their address is at the end of this article.

These problems aside, the Club 10 is quite easy to assemble. You don't have to force or trim the parts to make them fit together (old pistons notwithstanding). Schumacher has designed their rotating parts to fit tightly; they must be broken-in for best performance.

When newly built, the drive train feels as if it's running in molasses, but it will break-in to a close-tolerance, smooth-running unit. Some makers design the parts so that they're slightly loose, and their cars might be faster out of the box, but Schumacher's approach results in a more accurate fit and better-working, longer-lasting parts.



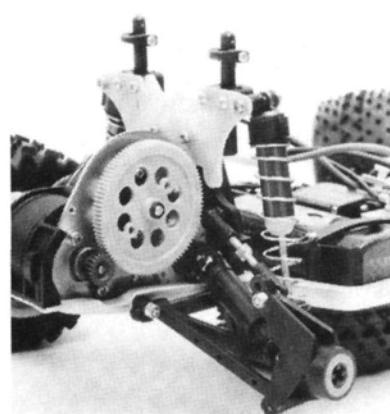
Above: the stock configuration has too much rear toe-in, so don't add the little white spacers behind the rear pivot blocks. **Above right:** it doesn't look like it works, but the spur absolutely will not come off until you pop that O-ring off with a screwdriver. The rear axle uses the same spline as the front.



The Club 10 strongly resembles its big brother, the Storm, and all the parts are interchangeable.

TRANNSY

The first step is to build the tranny. To adjust the diff while it's in the truck, remove its dust cap, insert a screwdriver blade into the head of the diff screw, and turn the opposite wheel. This can be a little tricky, so take care to set it correctly before you install the tranny. Tighten the diff screw until you can't make it slip by hand. (I had to take the tranny out of the truck twice to tighten the diff.)



The hardest step is building the universal joints. The plastic parts are quite stiff and can break if you try to bend them when they're cold. You can soak them in hot water, but you might have better luck if you blast them with a hair dryer. Schumacher provides a tool to install these, but I found it easier to use narrow-jaw needle-nose pliers to bend the ears apart far enough to slip the U-joint into place.

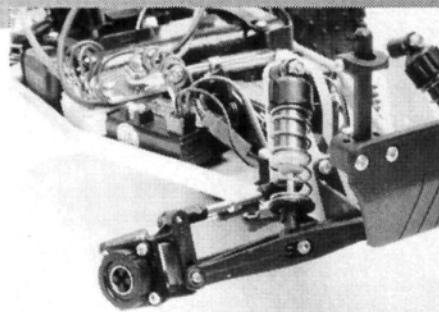
SUSPENSION

Study the directions carefully when you build the rear suspension. In step 1, put the pivot pin in the pivot block before you screw it to the chassis. The screw holds the pin in place, so the pin has to go in first. I recommend that you

CLUB 10

leave off the A206 toe-in washer (installed behind the rear pivot block in step 2). If you use it, you'll have too much rear toe-in.

The fiberglass shock towers are routed from sheet stock. Where the router stopped, there's an extremely sharp protrusion that you should file off. I scraped myself twice before I broke down and did it. Do the same for the front shock tower and fiberglass speed-controller parts.



Here's Schumacher's signature splined axle. It takes a few tries to get the knack of mounting wheels on this baby. The substantial front bumper will protect your truck as you ram your way to the front.

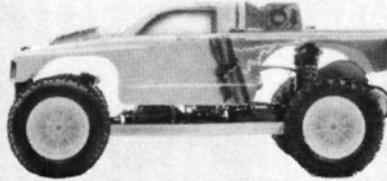
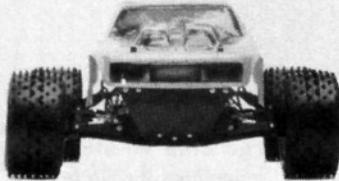
The front hubs use sealed ball bearings. Only the black side is an effective seal, so be sure that you put that side out. If you buy the optional

bearing kit, remember to put the black side out on all those bearings, too.

The turnbuckles are marked with a little groove near one side. Mount all the turnbuckles with this mark to the same side, so you can turn them the same way to adjust them.

You have to press a steel ball into the lower part of the front shock absorbers. It isn't obvious, but the hole in the plastic part is bigger on one side. Press the ball in from the big end, or you might split the plastic (it happens to the best of us). To be even safer, you might heat the plastic first with a hair dryer.

SCHUMACHER CLUB 10



Manufacturer Schumacher
Type 2WD racing truck
Scale 1/10
Price \$229.95

DIMENSIONS:
Overall length 16 inches
Width 12 inches
Wheelbase 11 inches
Front track 9.5 inches
Rear track 9.5 inches

WEIGHT:
Gross (with battery) ... 3 pounds, 13ounces

BODY:
Type Stadium truck
Material Polycarbonate

CHASSIS:
Type One-piece tub
Material Aluminum

DRIVE TRAIN:
Primary Pinion/spur
Transmission Kevlar belt

HITS:
• Versatility; it can be upgraded to racing specs, and it can easily be converted from a truck to a buggy to a rally-car. • Low price of admission • Smooth, belt-drive tranny with ball diff • Mechanical speed controller included

MISSES:
• Mechanical speed controller included
• Errors in instructions • Missing parts

Differential Ball
Bearings/bushings Bronze bushings
(bearings in front)

SUSPENSION:

Type (f/r) Independent A-arm with upper control link
Damping (f/r) Oil-filled, coil-over shocks

WHEELS:

Front: Type One-piece nylon
Dimensions (DxW) 2.2x2.0 inches
Rear: Type One-piece nylon
Dimensions (DxW) 2.2x2.1 inches

TIRES:

Front/Rear Combination spike

ELECTRICS:

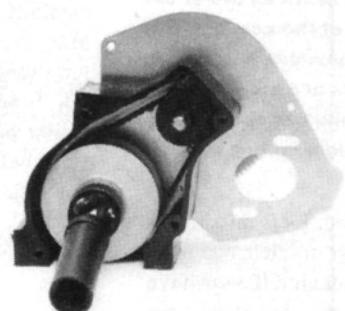
Motor RS-540
Battery None
Speed controller Mechanical
3-speed w/reverse

OPTIONS AS TESTED:

Futaba* Magnum Sport Radio

ELECTRONICS

I suggest that you don't bother with the mechanical speed controller. I don't like them,



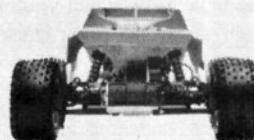
Simplicity itself. This tranny is easy to build and maintain, and it can be upgraded with a Pro diff and a slipper clutch.

but if a kit comes with one, I like to test it. The Club 10 came with a stock 540 motor and a 3-speed mechanical controller with reverse. By the time I had finished two battery packs, the resistor had burned up, leaving only top speed (I lost reverse, too).

If you really want to race the Club 10, an electronic speed controller (ESC) is essential. An ESC will give you faster acceleration, smoother throttle response and longer run times.

IN THE DIRT (UNDER THE WATER)

I grabbed a stack of freshly charged batteries, added the trick "Storm Beneath the Calm" body by TK Designs* and headed for the beach. The truck did quite well in the soft



(Continued on page 147)

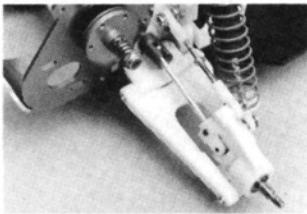


HOTTEST BOLT-ON ACCESSORIES

Have you ever heard: "Man, I really have to get that new (fill in the blank) for my car, it's way trick!"

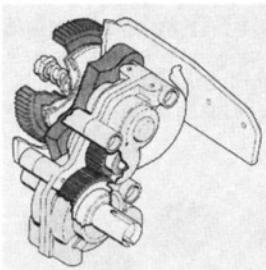
Or how about this one: "You guys have to see the new (fill in the blank). I have to get it for my truck before the next race."

Hot products come into the *Car Action* office daily. We're constantly bombarded by new speed controllers, radios, receivers, motors, chassis accessories and on and on and on. You name it, we have it! But when it comes to the 25 best bolt-on items for your R/C car, what gets our vote? Ask and ye shall receive.



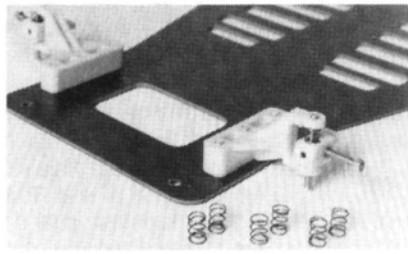
A&L TRX-1 Dogbone Kit

A direct replacement for the TRX-1's molded slider-shafts, these precision-machined, high-grade, stainless-steel dogbones free suspension travel, improve handling and increase run times. The special, machined, alloyed-steel outdrives are hardened for long life. They're also available for the Traxxas Blue Eagle LS and Losi's JRX-Pro SE and LX-T.



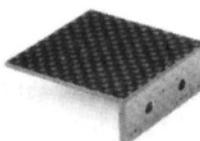
ASSOCIATED ELECTRICS Stealth Transmission

Make your RC10 faster and easier to drive with the Stealth transmission. It includes Associated's Torque Control; a long-life clutch friction plate; a quick-change spur gear; a low-inertia drive train; precision-molded, 48-pitch gears with a low 2.25 final drive ratio; reversible motor mounting; class 3, stainless-steel ball bearings; and tungsten-carbide diff balls. This transmission will cut lap times considerably.



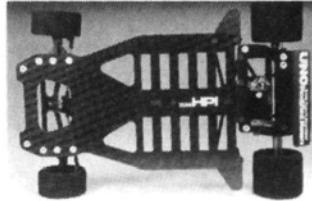
BUD'S RACING PRODUCTS Super Machine Front End

Every track (even carpet tracks) has rough spots that a stock front suspension can't handle very well. This front end will help. It increases front suspension travel by 50 percent, and it can be attached directly to any 1/2- or 1/10-scale car that uses Associated-type suspension arms. It has oversize kingpins (attached to the steering block with setscrews instead of E-clips) that reduce front-end play; four, large, color-coded suspension springs (available in different tensions); and 4-40 locknut stub axles.



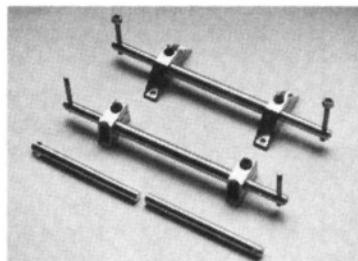
HOLESHT RACING PRODUCTS ESC and Receiver Bracket

This is definitely a hot item! This extremely light graphite shelf allows you to mount your receiver or electronic speed controller on top of your model's rear battery mount for more efficient airflow through the FETs; the cooler your ESC, the better it functions. It's screwed directly onto the shock tower of your Losi or Associated off-road car or truck.



HPI RC10L Wide Front Chassis

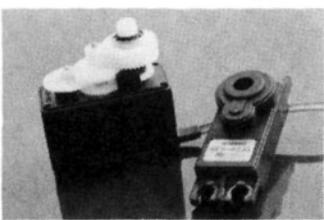
This chassis increases front track by 1/4 inch and this allows you to use the stock 10L front suspension components without having the understeer that's common with them. The chassis is made of super-strong graphite that reduces chassis flexing so that the suspension can work efficiently. Mike Blackstock used it, and he TQ'd at the first IFMAR 1/10 Scale Worlds.



INSIDE LINE Split-Axle Front End

This light, dependable, easy to maintain, split axle front end provides maximum performance. It's hand-crafted of high-grade aircraft aluminum and its camber, caster and width are fully adjustable. The standard kit includes four half-axles with 0, 1, 2, or 3 degrees of camber. You can also order half-axles with different settings. Infinite adjustability is available!

25 HOTTEST BOLT-ON ACCESSORIES



JR PROPO JRPS 4735 Servo

Check out this new high-tech servo. It has two ball bearings and 90.42 ounces of torque. Its transit time is .15 second, and it measures 1.75x0.74x2.14 inches. It's perfect for trucks and 1/8-scale gas cars!

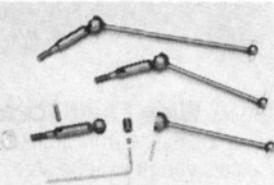
LITESPEED Litesink Super Cooler Motor Sinks

This black-anodized, finned-aluminum heat sink keeps your motor running between 30 and 60 degrees cooler, and this increases your run time by 20 to 40 percent. It pulls heat from the motor and transfers it to the air, just as a radiator in a full-size car does.



MIP Constant-Velocity Drives

Do you want the ultimate drive shafts for your Associated off-road car or truck? These modular drives can be totally rebuilt, and they have one-third the measurable output interruptions that common universals have, with near zero backlash. They last up to six times longer than standard universals or dogbones.

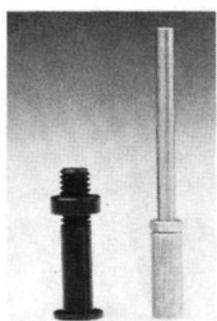


NOVAK HPc Speed Controller

This speed controller has HyperFET transistors for low resistance, adjustable current limiting and 2500Hz high-frequency



pulse-width modulation for more efficient battery recharging during partial throttle. It also has solid-state reverse-voltage protection that protects the ESC from using reverse voltage without a fuse.

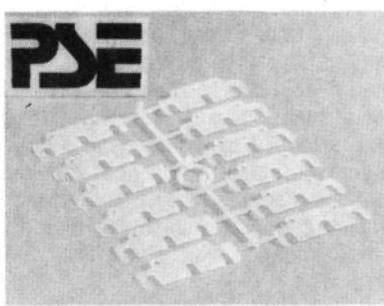


PARAGON Titanium Nitride Equalizer Damping Post

This post increases stability and improves the handling of Associated on-road cars. Its new design allows both damping disks to maintain equal pressure on the pod plate, regardless of the car's attitude. By not being loaded up or sprung, the car is more stable. Loosen or tighten one nut to adjust all tensions evenly.

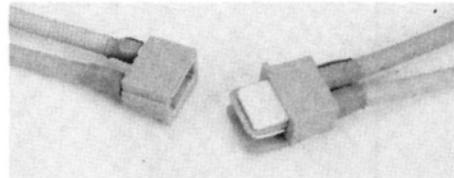
PRO-LINE USA 2.150 One-Piece Rims

Do you remember the controversy about 2.2-inch rims from Europe and Japan? ROAR doesn't allow them and, since most clubs use ROAR rules as a basis for setting their own guidelines, if you wanted to use the new 2.2-inch tires, you had to glue rubber bands onto your legal-size 2-inch rims to enlarge them. These ROAR-legal, 2.150-inch (the maximum legal size) rims make the tire dilemma ancient history. With the new rims, racers can use both 2.2-inch and 2-inch tires—the best of both worlds!



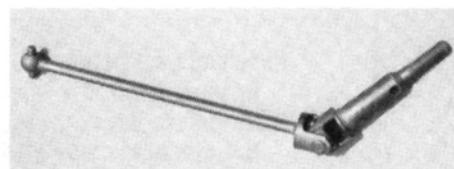
PSE Quick-Change Caster/Camber Wedges

Associated's pan-car front suspension is one of the best. Its only flaw is that it's difficult to adjust. To adjust caster, you must remove the screws that hold the suspension to the chassis to insert the wedges. With these dyeable nylon caster/camber wedges, just loosen the mounting screws and insert the wedges for quick adjustments. They're the ultimate front-suspension tuning tool!



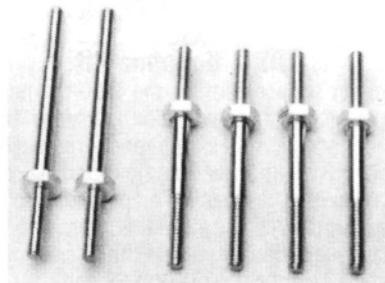
RACE PREP PRO 2 Connector

These connectors have "goof-proof" protection against reverse polarity. A nylon ball between the gold-plated, ultra-low-resistance plates ensures extra contact pressure for greater conductivity and longer life. They're compatible with Race Preps' standard Pro connectors.



RAETECH Universal Axles

RaeTech offers long-lasting, super-smooth universal axle shafts for the RC10T (to replace the standard dogbone-and-axle assembly) and the Losi LX-T (to replace its molded slider shafts). The chromed alloyed-steel axles are heat-treated, and they have a dry-lubed finish, so they're ready to take the abuse of off-road truck racing.



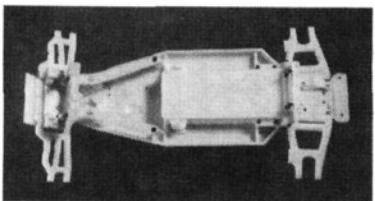
RCPS RC10T Titanium Turnbuckles

To strengthen a weak linkage in your car or truck, add these heavy-duty, light, turnbuckles. They're made of 6AL, 4V titanium.



ROBINSON RACING PRODUCTS Aluminum Silencer Pinions

These aircraft-grade aluminum silencer pinions are thin, superlight, profiled and hard-coated with a self-lubricating, two-stage anodizing process. They're available in 48-pitch, 12-tooth to 35-tooth; and 64-pitch, 16-tooth to 47-tooth, and they're stamped with the tooth number.



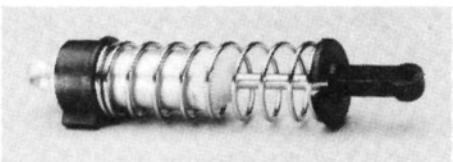
RPM Molded RC10 Chassis

Is your old RC10 chassis bashed and worn out? Replace it with this new molded chassis that uses RPM's World's front and rear suspension. The kit includes nylon steering bellcranks, a top battery cover and all the necessary mounting hardware.



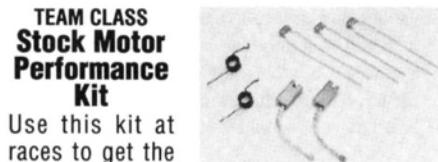
S&K RACING PRODUCTS Airs Body

This light, lean, aerodynamic body gives your truck superior racing performance. It's designed to reduce drag, and it has the S&K Air-Inducted Racing System, which ducts air from the front of the body to the rear, where it cools the motor and thus allows longer run times and lengthens the motor's life.

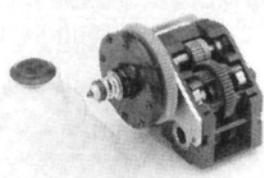


SCHUMACHER Vari-Shocks

These hard-coated, aluminum-body shocks have externally adjustable damping—and you don't have to change oil! Rotate the two-piece pistons to change their number of holes, i.e., valving, from one to four. Now you can take one bottle of 20WT shock oil to the track and simply adjust the valving to vary damping. The shocks come with special, low-friction, "rebuildable" seal cartridges and foam volume compensators.



Use this kit at races to get the most out of handout motors, or use it when you set up new stock motors. It includes everything you'll need: three high-frequency capacitors, two Venturi soft brushes and super-heavy brush springs for low-end punch. The fastest stock drivers in the country use this kit.



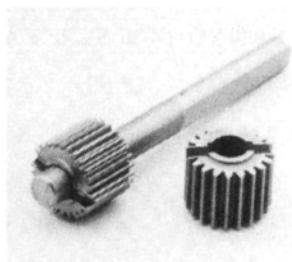
TEAM LOSI Hydra Drive

This hydraulic-power transmission system works with the standard Losi friction slipper, and it uses an impeller and thick fluid to regulate motor torque. This enables you to run the friction slipper more loosely than usual, and this allows for much more traction on slippery surfaces. The system includes the Hydra Drive unit and the basic friction slipper components.



TEKIN FM Micro Receiver

This is the world's smallest FM receiver—1.2x1.2x.57 inches—so it fits just about anywhere on your R/C car. It's light (.47 ounce) and has low operating voltage, a mini antenna, reverse-voltage protection and low current draw. It works with all popular FM radio systems.



THORP MFG. Stealth Hydra Drive Shaft

This drive shaft enables you to use Team Losi's Hydra Drive system and slipper with your Stealth tranny. It can also be used with Thorp's 64-pitch gear set, or with the stock, 48-pitch gears.



TRINITY Evolution Front-End Kit

The Trinity front end that was used to win the 1/10-Scale IFMAR Worlds is now in kit form! It can be bolted directly onto your 1/10-scale Associated or Bolink on-road car, and it has infinitely adjustable camber and caster. To boost low-speed steering, it can be set to automatically decrease caster as the suspension is compressed. It's available in super-speedway or standard versions.

ADDRESSES

A&L Mfg.
P.O. Box 2115
Corona, CA 91718
(714) 735-5249

Associated Electrics
3585 Cadillac Ave.
Costa Mesa, CA 92626
(714) 850-9342

Bud's Racing Products
1575 Lowell St.
Elyria, OH 44035
(216) 284-0270

Holeshot Racing Products
P.O. Box 630
Canton, MA 02021
(508) 587-0663

HPI
22600-C Lambert St.
Ste. 904
El Toro, CA 92530
(714) 837-3250

Inside Line
12859 Route 108
Highland, MD 20777
(301) 854-2701

JR Propo
distributed by Horizon Hobby
3102 Clark Rd.
P.O. Box 6029
Champaign, IL 61821
(217) 352-1913

Litespeed
P.O. Box 4765
Spokane, WA 99202
(509) 535-2717

MIP
746 E. Edna Pl.
Covina, CA 91723
(818) 339-9007

Novak Electronics Inc.
128-C E. Dyer Rd.
Santa Ana, CA 92707
(714) 549-3741

Paragon Racing Products
690 Industrial Circle South
Shakopee, MN 55379
(612) 496-0091

Pro-Line USA
P.O. Box 456
Beaumont, CA 92223
(714) 849-9781

PSE
13927 Progress Pkwy.
North Royalton, OH 44133
(216) 237-8650

Race Prep
852 S. Highway 89
Chino Valley, AZ 86323
(602) 636-1955

RaeTech Inc.
3101 West Thomas Rd.
Phoenix, AZ 85017
(602) 272-4223

RCPS
18312 Gifford St.
Fountain Valley, CA 92708
(714) 962-6928

Robinson Racing Products
165 N. Malena Dr.
Orange, CA 92669
(714) 771-4562

RPM
14978 Sierra Bonita Ln.
Chino, CA 91710
(714) 393-0366

S&K Racing Products
215 S. Market St.
Oskaloosa, IA 52577
(515) 673-6930

Schumacher Inc.
6302 Benjamin Rd.,
Ste. 404
Tampa, FL 33634
(813) 889-9691

Team Class
RD 1, Box 187A
Cosby Manor Rd.
Utica, NY 13502
(315) 724-8052

Team Losi
13848 Magnolia Ave.
Chino, CA 91710
(714) 465-9728

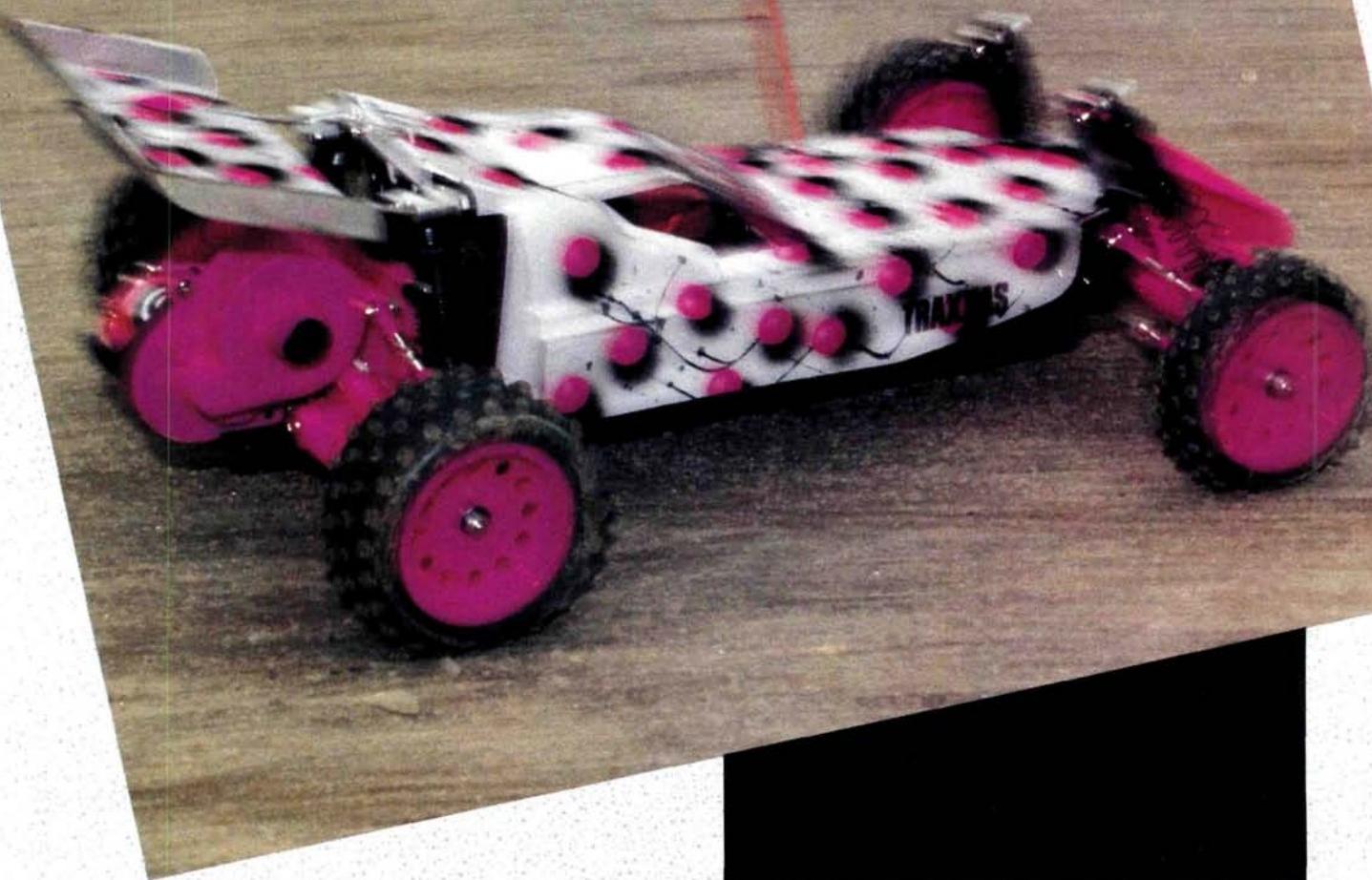
Tekin Electronics
970 Calle Negocio
San Clemente, CA 92672
(714) 498-9518

Thorp Mfg. Inc.
4054 E. Mission Blvd.
Pomona, CA 91766
(714) 622-6518

Trinity Products Inc.
1901 E. Linden Ave., #8
Linden, NJ 07036
(908) 862-1705

Entry-level explosion

CAR ACTION.
TRACK REPORT.



EVERY ONCE IN a while, it's good to forget about all the latest nuclear motors, high-tech shocks, super-exotic chassis, hyper servos and speed controllers, flavor-of-the-week tire compounds and tread patterns, and just get back to the basics!

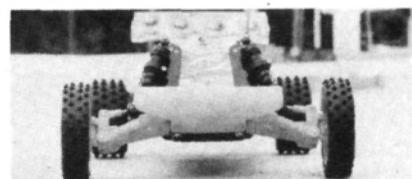
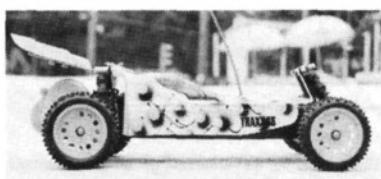
I greeted the UPS man with a big hello and a deep sigh of relief as he handed over my latest

assignment from the Ayatollah of Radio Control—the new Rad 2 buggy from Traxxas*. After I looked over the attractive, compact box (with pictures and highlights of the kit), I shook my head in amazement at just how far "entry-level" vehicles have come. When I started in this hobby five years ago, a beginner's kit was almost as basic as a static plastic model.

Traxxas **RAD 2**

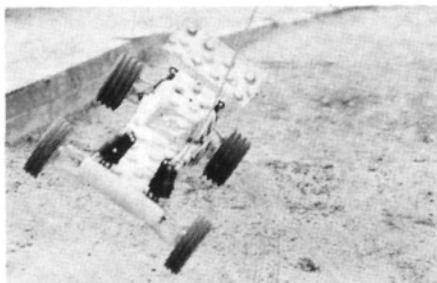
by LOU MARCIELLA

TRAXXAS RAD 2



Sure, there was some good stuff out there, but it cost a pretty penny—even more for the upgrades that would make it competitive. Thankfully, reputable manufacturers have wisely chosen to give today's consumer "more bang for the buck." The Traxxas Rad 2 is a real blast!

Many pleasant surprises were in the box: what appeared to be the Blue Eagle LS Pro transmission and slipper clutch (but with a very interesting feature—more on *that* later), lots of ultra-tough nylon parts (oh boy, here



Track testing: the Rad 2 flies off jumps with ease and takes landings in stride. This car can take beginners to the winners' circle.

comes the hot-pink Litespeed* dye!); beefy, adjustable turnbuckles; a clear Lexan body that was already cut out (thank you, Traxxas!); fiberglass shock towers; mega pin-spoke tires; and (are you ready for this?) 2.15-inch wheels! In their quest to make life easier and better for the beginner, Traxxas wanted this kit to rock'n'roll, so they included a sealed, three-speed (with reverse) mechanical speed controller and a stock Mabuchi 540 motor. All you have to do is add a 2-channel radio. Where was the Rad 2 when I started out??!

I'd like to commend Traxxas on its excellent instruction manuals. The Rad 2 book is no exception; it's loaded with clear photos and detailed text that includes racer tips, hop-up recommendations and set-up/racing suggestions. Traxxas also has a toll-free hotline in case you run into a jam as you build and run its cars.

To keep construction as simple as possible, parts are bagged according to the steps in the manual. I decided to assemble the new black shocks while I boiled and dyed the nylon components. The Radicator's front bouncers were very short and offered limited travel. For this bad boy, Traxxas went with long composite shocks all around for maximum movement. I installed three-hole pistons in the front

Type 2WD off-road buggy
Scale 1/10
Price \$160

DIMENSIONS:

Overall length 15.75 inches
Width 9.875 inches
Wheelbase 11 inches
Front track 7.5 inches
Rear track 6.5 inches

WEIGHT:

Gross (with battery) 3 pounds, 8 ounces

BODY:

Type Buggy
Material Polycarbonate

CHASSIS:

Type Reinforced tub
Material Composite plastic

DRIVE TRAIN:

Primary Pinion/spur

Transmission 3-gear with slipper clutch (2.72:1)
Differential Gear
Bearings/Bushings Brass bushings

SUSPENSION:

Type (f/r) Independent A-arm with upper link
Damping (f/r) Oil-filled, coil-over shocks

WHEELS:

Front: Type One-piece molded nylon
Dimensions (DxW) 2.15x0.875 inches
Rear: Type One-piece molded nylon
Dimensions (DxW) 2.15x1.375 inches

TIRES:

Front/Rear 3-step pin spike/medium

ELECTRICS:

Motor Mabuchi 540
Battery 6-cell stick pack*
Speed Controller Sealed 3-speed mechanical with reverse

HITS

- Low price • Sophisticated chassis for an entry-level car • Can be upgraded significantly to be competition-ready • Extensive factory support, e.g., toll-free service hotline and easily available replacement parts.

MISSES

- Composite shocks require work to operate smoothly • Lacks ball differential

and two-hole units in the rear. Be careful to put the correct springs on the shocks: the fronts are softer and look different than the rears. I assembled the shocks without any major headaches. The new blue O-rings, black springs and 30WT silicone oil (included) gave these babies a nice feel when I compressed them by hand.

I removed the dyed nylon parts from the pan and ran them through cold water for

"In their quest to make life easier and better for the beginner, Traxxas wanted this kit to rock'n'roll..."

about 5 minutes. I put them aside to dry and started to build the transmission.

After I marveled over the inclusion of high-speed

Pro black gears, I quickly built the gear diff—that's right, this kit has a heavy-duty, 48-pitch, metal gear diff instead of a complicated ball-type unit with a million tiny parts (a ball diff performs better, but novice R/Cers will appreciate the gear diff's simplicity).

It was difficult to fit the optional ball

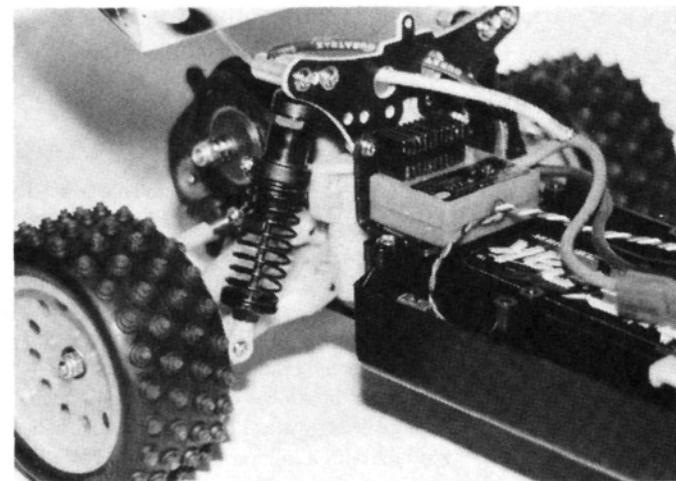


The Traxxas Rad 2 is designated as an entry-level car, but its performance exceeds that of most other "beginner cars."

bearings onto the diff's output shafts, so I had to take out the grit cloth for a few moments of careful polishing. I phoned Traxxas to point this out, and they explained that tolerances were kept tight to allow a certain degree of wear if the supplied bronze bushings were used. If you're ready to pop in a set of bearings after you've run the Rad a few times, they should fit without a problem. (I prefer to install bearings when I'm building.) I'm pleased to report that I didn't have difficulty with the rest of the assembly.

Next, I attached the tranny and suspension components to the tub-style chassis. The chassis is made of a rigid plastic, so don't attempt to boil it—it will shrink and warp! When I saw how cool the neon-pink nylon parts looked, I decided to give the chassis a couple of coats of Pactra* "Outlaw Black" paint to contrast with them. You might want to gently scuff the chassis to help the paint adhere to it. Don't forget to let it dry thoroughly.

Happy with the way "Project Rad 2" was looking, I attached the suspension arms,



The kit's shocks will suit novice to intermediate drivers. To improve performance, add Traxxas' TRX-1 hard-anodized shocks.

transmission, and fiberglass shock towers (hooray—no aluminum units to bend in the inevitable crashes to come!). Once again, Traxxas made the best choice; fiberglass "gives" and is very lightweight (*and inexpensive to replace*). On went the shocks and the fully adjustable turnbuckles. Even in this very

"...and mouths dropped open as the Rad flew cleanly over the 2-foot jump and made a smooth, controlled landing."

inexpensive kit, Traxxas has supplied slider shafts to drive the rear wheels instead of dog-bones, which have a nasty tendency to get lost, bend and break at the most inopportune times—like when you're having fun blasting around in the dirt!

Finally, it was time to put on the tires and wheels. I can't get over the fact that the Rad comes with 2.15-inch competition wheels. TRX-1 owners may want to pick up a set of these one-piece units—the largest wheels allowed by ROAR. The supplied tires are a medium-compound, 3-step-pin design and should work very well for "backyard bashing" and on loose to medium dirt.

A big smile came

over me when I saw that the Lexan body was already cut out—it also had mounting/antenna holes and window mask. Boy, do beginners have it made today!

It was time to paint—uh-oh. I've revealed in past articles that paint and I just don't get along. Despite all the fabulous "How To" articles that *Car Action* has run on this subject, just the thought of a custom paint job makes my blood turn cold—heck, I'd rather wrassle a grizzly bear!

So, I paid a visit to a local hobby shop in search of an airbrush artist. I couldn't help noticing that the young man behind the counter was doing a nice paint job on a truck body. Hallelujah, my prayers were answered! Three days later, I got a message that there was a surprise waiting for me at the hobby shop. Out came the body from the back room—wow! What a "fantabulous" paint job!

After I had calmed down, I explained that I needed electronics to give this missile some

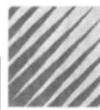


A Hobbymania stock motor powers the Rad 2. Jim Thompson and A.J. Lorello were very helpful with setup—thanks, guys!

muscle. Immediately, the young paintmeister produced a DuraTrax* DTX-4 ESC that he had converted to a 3-wire setup, a Dynamite* micro receiver, a Futaba* S-148 servo and a Hobbymania* "Tickle Me Pink" short-stack, slotted motor. Folks, a paint job and service like this can't go without acknowledgement. This fella's name is A.J. Lorello Jr., and he and Jim Thompson (the owner of Hobbymania) are a real credit to the industry. If *Car Action* ever has a "dealer of the year" award, these guys get my vote!

I hung around the shop for a while and installed the electrical stuff. Take your time on this step so that your servo, ESC and receiver don't let you down while you're

(Continued on page 147)

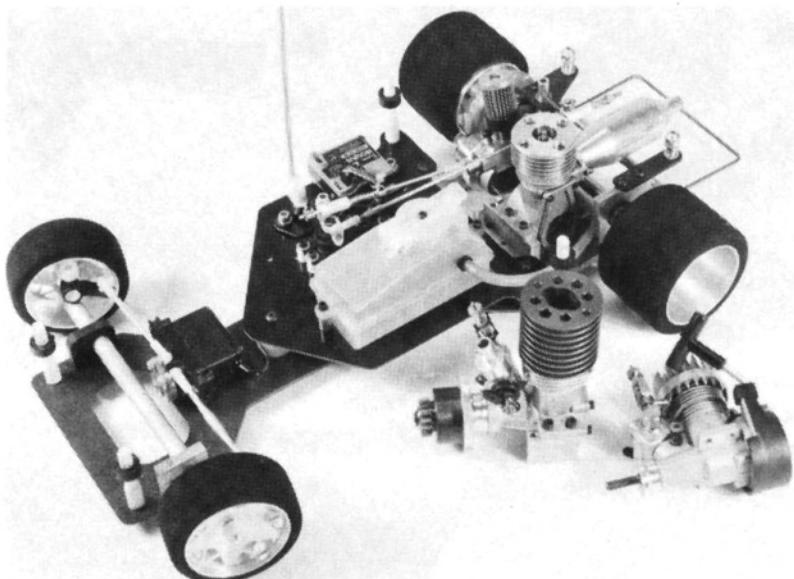


EXPANDING GAS

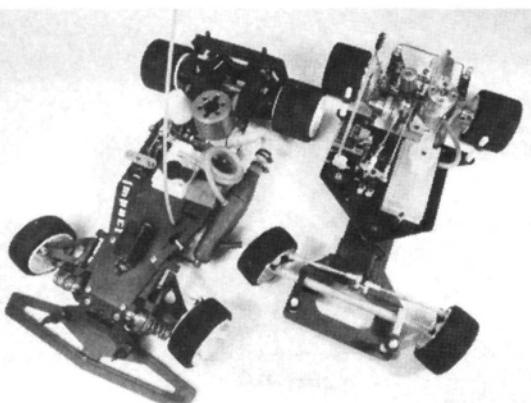
by JEFF BRONSTEIN

R/C CAR ACTION has always had its finger on the pulse of competitive racing. When racing news breaks, we bring you the facts that are fit to print. But we do more than just report information; we support the evolution of racing. *Car Action's* 1/10-Scale Nitro Shootout is just one of the many ways in which we promote the growth of diverse racing competition. Gas racing's popularity has come a long way since our first report of its comeback. Of course, we're not saying that our coverage made it happen—but we're not saying that it didn't.

It's almost impossible to predict what type of racing will be popular in the future, but gas racing is here to stay. The growth of 1/10-scale gas has been steady, despite the lack of comprehensive rules for this class. Although it will probably continue to expand, the rules that define 1/10-scale gas should be written to help bolster its popularity.



The first R/C cars were based on simple pan-type chassis such as this 1/10-scale gas version. The pan chassis is easy to work on, it's simple to understand, and very similar to those used in electric cars.



These full-suspension (left) and flat-pan (right) gas cars are two of the many variations that are being considered for future 1/10-scale classes. Both are excellent cars, but competition between them wouldn't be fair.

In Europe, where 1/10-scale gas racing is already a phenomenon, the rules create three distinct classes based on engine displacement. If the U.S. and Canada are going to compete against the Europeans, their rules must be similar. Here's the

major dilemma: if the rules don't sufficiently limit chassis—and in particular, engine—specifications, gas racing will follow where the battery "cell-war" led electric racing—into an uncontrollable downward spiral.

RULES OF THE ROAD

So, what's the big deal about setting rules? To understand the problems facing the formation of a new gas class, let's first look back at 1/8-scale racing in its infancy.

In its early days, gas racing was a competitive, accessible sport. Pan cars were fairly inexpensive, and their engines were far less powerful than they are now. Racing was competitive and fun because everyone had an equal shot at winning.

With the invention of the full-

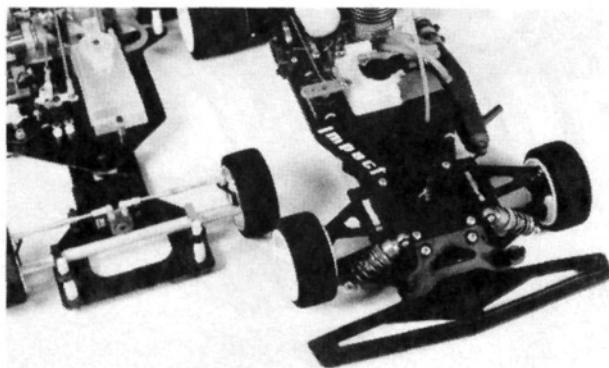
suspension car, gas racing's level of complexity—and its cost—jumped. Many racers were unwilling or unable to make the switch, and 1/8-scale's popularity dropped off sharply. At the same time, engine technology rapidly improved, and engine performance became more critical. When the rules were established, an engine size of .21 cid (cubic inch displacement) seemed reasonable. These engines, however, now produce twice the power.

Racing became a face-off between the engine "haves" and the "have nots," much like today's battery controversy in electric racing.

In Europe, where most of the competitive 1/8-scale engines and cars are manufactured, nearly every town has a permanent R/C racing facility. Gas racing is almost as popular there as Little League baseball is in the U.S. European tracks can handle the gas car's high speed, so faster cars are welcomed.

When IFMAR was formed, it was agreed that the rules could only be altered

(Continued on page 90)



On the left is the straight front axle that's typical of many 1/10-scale electric cars; on the right is the full-suspension arrangement that's usually associated with 1/8-scale racing. Both setups are effective, but which will be more popular in 1/10-scale gas racing? Only time will tell.

by a majority vote of ROAR, FEMCA and EFRA, its member organizations. ROAR's attempts to slow the advancement of gas racing in North America have been overruled several times. Although American and Canadian racers have learned to adjust, IFMAR's reluctance to curtail gas racing's development and cost has hurt 1/8-scale in the U.S.

When the first 4WD cars were introduced, many U.S. racers were unwilling to make the switch, and again, the sport's popularity dropped off. But, only a handful of racers who still enjoyed the competition seemed concerned. As the cars developed two-speed transmissions, the remaining racers dwindled to a select few who could find, operate, maintain and compete with these very sophisticated, expensive race cars. Aside from the die-hard gas enthusiasts, most racers turned to other scales.

The simplicity and "affordability" of electric-powered pan cars gave many disheartened U.S. gas racers another chance. The electric racing rules were developed with strict chassis specifications. Unfortunately, no one anticipated the rapid escalation of battery and stock-motor technology. As with gas cars, by the time anyone realized what was happening, it was too late.

RENEWED POPULARITY

Today, 1/8-scale gas has a new lease on life, mainly because new, improved chassis and the latest engine technology has become available to all racers. Also, many electric racers are tired of competing off the track for the best batteries and motors. Now, gas racing has expanded into almost every class, including off-road, pulling,

racers who love speed, technology, realism and more speed. That's why its called the Formula 1 of R/C racing.

So, how does this little story relate to the expansion of new classes and to the future of competitive R/C racing? Now that we stand at the threshold of a new racing era, the same problems that plagued 1/8-scale gas seem inevitable. Depending on how the rules are established, new classes of racing present a blank canvas that represents endless possibilities—or potential disasters. Studying our past failings shows us where we went wrong, and it allows us to avoid making similar mistakes in the future.

One problem we already face in the 1/10-scale gas class is that many manufacturers have introduced new 1/10-scale cars and engines—cars and engines that may not comply with the upcoming ROAR rules. Each manufacturer expects his car to set the standard for the class, but inevitably, some of this new equipment won't be covered by the rules, and the rule-makers will be accused of collusion.

One condition, however, has already been agreed on by all the separate, sanctioning bodies: for this class to be as

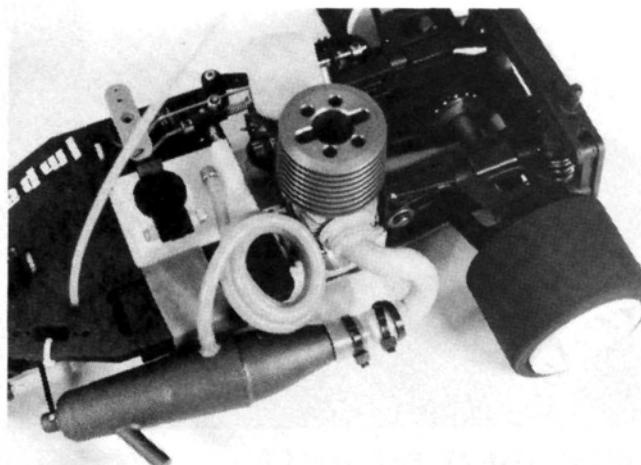
drag and oval.

But the fight isn't over. Recently, the three-speed transmission was approved for international, gas, on-road competition. This leaves some speculation as to what will come next. Gas racing will always be suited to die-hard

popular and successful as electric, it must be kept simple so that the drivers' costs remain at a reasonable level. Standardized engine specifications for all classes are a good start. Prohibiting special modifications might be sensible, and so might a "claiming rule" that allows a competitor to seize an engine after a race. Chassis technology should be limited to 2WD, and two-speed transmissions should only be allowed in the expert classes. With these rules, the time and money that racers spend on their engines would be limited.

COMBUSTION CLASSES

Finally, I wonder how the different engine classes will affect the sport. Unlike electric racing, where the cost of a stock motor and a modified motor are considerably different (\$28 for a stock, \$80 for a modified), .12-class and .15-class gas engines would be similarly priced. But



Many features that we usually associate with 1/8-scale gas cars are slowly creeping into 1/10-scale as well. This EFRA-style tuned pipe and the Mega 15 Engine from Serpent are examples.

how many people will buy a .12 engine if they can buy a faster .15 for the same price? If a .15-size engine is properly controlled, it should run better and last longer using only a portion of its potential.

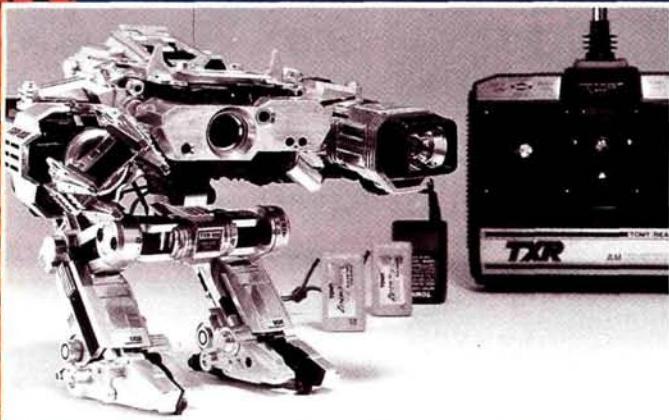
Many other questions must be considered before the final rules are established, but there's no question that 1/10-scale gas has unlimited potential. Optimistically (I always try to end with an optimistic view!), I hope to be at the first 1/10-scale gas nationals in the not-too-distant future, and you can bet your glow plugs that *Radio Control Car Action* will be there, too! ■

TOMY

Robot

by CHRIS CHANELLI

WANT something different? Something to keep you busy when a 50-foot snowdrift covers your off-road track? Something to torment the family dog with? If your answer to any or all of the aforementioned questions is yes, then a Tomy* TXR 002 is probably right for you. And, if you're very, very lonesome, Agent 002 can and will be your special friend.



The TXR 002 comes with two rechargeable 120mAh, 7.2V batteries and AC charger. The radio, including in-robot mini-receiver and servos, is made by JR Propo.

The 4-channel robot is operated by a high-quality, two-stick JR radio. Agent 002's functions (marked just above the sticks on the transmitter) are: head up/head down, turn left/turn right, forward/reverse and left arm/right arm. My 002 came with a spotlight arm, so my mechanical buddy can light my way, and a pincer arm that does little more than snap open and shut. This snapping becomes anemically slow when the 002's on-board, 7.2V, 120mAh battery is in need of a charge (after four or five minutes of running). The more violently inclined can replace the spotlight and pincer arms with optional punching and pellet-shooting arms. American lawyers are, no doubt, praying for import approval of the latter.

While it isn't quite accurate to characterize 002 as a precision piece of radio-control mechanized artistry, it is a clever work of R/C gadgetry. Let me explain some of its... "performance?" The 002 moves forward and backward by virtue of wheels in its feet, and it makes swiveling right and left turns. This swiveling can be done in place at high speed, turning Agent 002 into a chrome-plated prima ballerina—probably my favorite 002 maneuver. The 002 does, however, require a smooth surface upon which to move. It's definitely not an off-road robot.

The most lifelike action is the up and down head movement; 002 says "yes" very, very well. The 002 does shake its head "no," but this action is actually a by-product of the turning function. If a turn is performed in place (no forward or reverse applied) 002 kind of does the twist (with an added foot shuffle) while it shakes its head "no." Agent 002 is quite an accomplished dancer! Very endearing indeed.

Agent 002 requires a good amount of intricate assembly, but nothing overly daunting; just be gentle with the screwdriver. The 002's tiny innards and tiny screws demand a delicate touch. Everything will turn out fine if, during assembly, you recite to yourself: "I'm building my companion, I'm building my friend, I must be gentle, or his guts I may bend."

As I write this, my creation and steadfast friend is walking my dog. I'm so glad he functions well on smooth surfaces. Carpeting is so much more of a bother to clean than linoleum. Goodbye for now from the both of us.

*Here's the address of the company featured in this article:
Tomy America Inc., 1050 West Central Ave., Brea, CA 92621.

PHOTO BY WALTER SUDAS

DANGER, WILL ROBINSON!





RADIO CONTROL CAR ACTION

RACER NEWS

WORLD-CLASS RACING



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Now we've seen it all. We knew he could drive off-road, 1/10-scale 2WD, 4WD—even 1/8-scale gas. We've even seen him drive—and win—1/12-scale on-road. But when Cliff Lett crossed the finish line ahead of the best superspeedway drivers in the country at Thunderdrome, we were convinced that he's the most versatile R/C driver in the world!

LETT WINS **BIG** AT THUNDERDROME

Lett, who was **victorious** in the grueling, 150-lap Superspeedway A-Main, took the lead at the halfway mark (after Ralph Burch Jr. was sidelined with technical difficulties) and never looked back. Lett's Associated teammate, Kent Clausen, piloted his "Tide Special" to an impressive second place.

Next to the **Insane Speed Run**, Superspeedway is the most popular event at **Thunderdrome**. It drew competitors from all over the country—all over the world, for that matter; one racer came all the way from Turkey! During qualifying, which consisted of 15-minute heats, the drivers were required to make **four pit stops** for battery changes and maintenance. This made the racing even more exciting because, in addition to being fast on the track, you had to have astute pitmen (one of the keys to Lett's victory). **Congratulations, Cliff. What's next? One-twenty-fourth-scale Tamtech?**


IEDA SUMMERNATIONALS WINNERS

CLASS	WINNER	ET	MPH
Bracket	Ryan Weeks	2.528	no mph
Super Stock	Corbitt Marshburn	3.081	40.34
Econo	Jim Edwards	2.854	41.07
Pro Stock	Chester P.	2.047	64.32
Super Comp	Chester P.	1.940	70.29
Alcohol Funny Car	Bob Smith	2.132	59.28
Top Fuel Funny Car	Ron Goca	2.025	60.87
Alcohol Rail	Terrence Holt	2.013	59.28
Top Fuel Rail	Derrick Roth	no time	
Unlimited	Derrick Roth	1.751	74.11
Super Gas	Tom Grgenti	2.479	52.85



So you think R/C drag racing looks like a lot of fun? And maybe you're a hobby-shop owner who wants to get a race program going, but you don't know where to start?

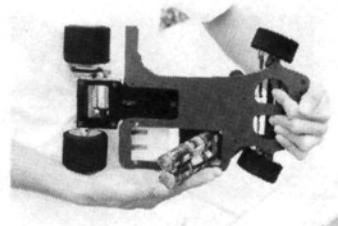
The IEDA Summernationals, which were recently held at Kim's R/C Pit Stop, were a great example of what can be accomplished by hobby shops, even if they don't have the luxury of a permanent, on-site R/C track. Owner Kimberly Frank went out and found a parking lot that could be used every weekend for club racing.

She invested in a portable, timing-light system and built a clientele by specializing in R/C drag-racing equipment—a need that hadn't been met in her area. The appeal is

PARKING LOT NATIONALS

obvious: drag racing has the fastest cars in R/C and tracks that even the "greenest" novice can navigate successfully. Kim talked to almost everyone in the sport to get feedback on just how to host and promote a national-level drag race. She found a lot of support from racers, manufacturers and the IEDA, which has been the force behind R/C drag racing for the past few years.

If your local hobby shop would like to start a drag-racing program, contact Rich Roth at the International Electric Drag Racing Association, 2 North St., Middletown, NY 10940; (914) 342-5102.



IT'S ALL A MATTER OF TIME

QUICK-CHANGE BATTERY SYSTEM

Having the right pit person is crucial to successful Super-speedway racing. Seconds count when you're battling for the top position, and you don't want to be stuck in your pits as your buddy grapples with a bogus quick-change setup. So what do you do? Get a quick-change system that enables you to change your battery in less than a second!

We saw some innovative quick-change battery systems in the pits at Thunderdrome. Carlos Turano of Cheetah Racing had a trick setup in which he depressed a body-post-type lever, and the battery was ejected sideways with help from a sprung rubber band. It was quick and very efficient.

Roger Pane, who ran in the Pro-Modified class, used a 3-channel radio to control his quick-change system. As his car entered the pit area, Roger threw a switch on his radio wheel that activated a third servo that ejected the battery from the car as his pitman grabbed it and put a fresh pack in—ultra-high tech!

So what will it be like at next year's event? Psychic battery changing?



RACER

NEWS



SPEED SHOP



HPI RC10L/10LSS Pro Hubs

The left-side hub, which is available for the RC10L, is balanced, anodized and light. The right-side hubs, which are available for the 10L and the 10LSS, are also light and anodized.

Part nos. 6145 (10L hub left); 6150 (10L hub right); 6155 (10LSS hub right).

Price: \$17; \$19; \$19.

Hobby Products Int'l., 22600-C Lambert St., Ste. 904, El Toro, CA 92630; (714) 837-3250.



TRINITY Bearing Setter

This tool helps you to gently remove and install motor-can bearings without damaging the inner races or balls.

Part no. RC 8811

Price: \$14.99

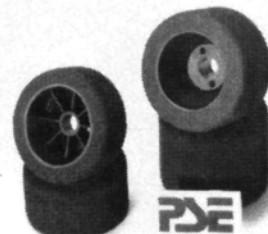
Trinity Products Inc., 1901 E. Linden Ave. #8, Linden, NJ 07036; (908) 862-1705.

DURATRAX PowerLine Slot Mania Motor

Now even the most cost-conscious stock-class competitor can put slotted motor power in his corner! Designed for all-out speed, this new DuraTrax motor is an unbeatable racing value. Its slotted armature produces faster speeds and greater rpm than standard stock motors, with cooler, more efficient operation. Its timing remains at 24 degrees—ROAR-legal and ready for any challenge.

Part no. DTXC3200

DuraTrax; distributed by Great Planes Model Distributors, 1608 Interstate Dr., Champaign, IL 61821; (217) 398-3630.



PSE 1/12-Scale Wheels and Tires

Pro Series 1/12-scale 1.95-inch-diameter wheels and tires are now available in 1-inch and narrow 3/4-inch widths! These American-made, lightweight injection-molded wheels are

made of sturdy, high-impact composite material. Sold in a wide range of glued and trued rubber compounds (including European), PSE 1/12-scale wheels and tires are also available separately.

Part no. 85141-86266

PSE, 13927 Progress Pkwy., North Royalton, OH 44133; (216) 237-8650.

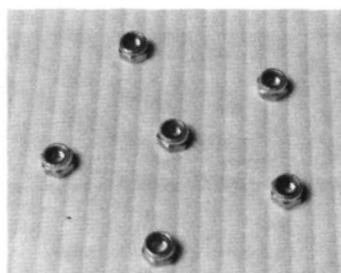
BUD'S RACING PRODUCTS Ultra-Mini Aluminum Locknuts

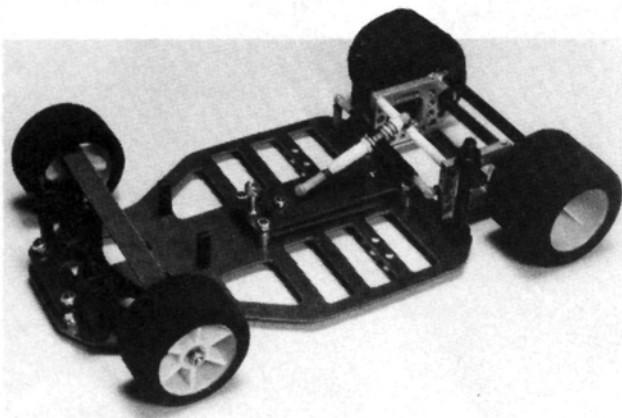
They're super-light and the perfect size to retain ball pivots on off-road cars. These locknuts are used on Bud's Super Machine front-end stub axles.

Part no. 7555

Price: \$2.95/6 nuts

Bud's Racing Products, 1575 Lowell St., Dept. RCCA, Elyria, OH 44035; (216) 284-0270.





BOLINK Eliminator 12CF

This new version of Bolink's Eliminator 12 has an improved rear suspension with a single shock and a silicone damper. To improve handling, the batteries have been moved closer to the center of the car. The rear-axle ride height is adjustable, and the wheelbase can be extended 1/4 inch. The kit includes all graphite chassis parts, ball bearings, a wing kit and wind-tunnel-tested road-racing body.

Part no. BL-1354

Price: \$225

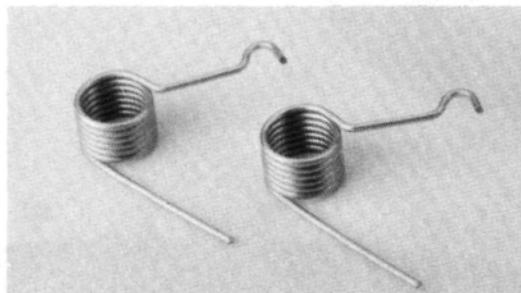
Bolink R/C Cars Inc., 420 Hosea Rd., Lawrenceville, GA 30245; (404) 963-0252.

MAXMOD MINI SPORTS Motor Dyno

This simple, compact dyno features full manual control for maximum versatility. It has some of the highest measuring capacities available: 200A spike load, 50,000Rpm, 32 ounce/inches of torque and 3/4hp. Another exclusive feature is the throttle control, which allows you to use your favorite speed controller without involving other radio equipment. The dyno tests forward and reverse rotation.

Price: \$495

MaxMod Mini Sports, 845-A W. Olive Ave., Monrovia, CA 91016; (818) 359-7737.



PARAGON RACING Ultra-Light Brush Springs

These new Paragon brush springs are even lighter than their standard Light springs. They apply even less pressure to the motor brushes. This increases motor speed while lowering the amp draw.

Part no. 80111

Price: \$2

Paragon Racing Products, 690 Industrial Cir., Shakopee MN 55379; (612) 496-0091.

PRODEUS Pro-Net

When your car's molded-in window safety net just doesn't cut it, install Pro-Net for concours-winning realism. It's available in black and several neon colors for use in all off-road buggies, trucks and on-road stock cars. It's a must for authenticity!

Prodeus Racing Products, 2069 Temple Trail, Jamul, CA 91935; (619) 468-9348.



Descriptions of the products shown on these pages were derived from press releases supplied by manufacturers and/or their advertising agencies. The information given is neither an endorsement of the product by Radio Control Car Action, nor a guarantee of performance or safety. If you write to the manufacturer about any product described here, be sure to say that you read about it in Radio Control Car Action.



by JOHN HOWELL



FRIDAY AFTERNOON
September 4th, 3:30 pm

Ring...Ring...Ring...

"Hello?"

"Hey, Frank, it's John. I finally made it to Georgia."

"What happened, man? You were supposed to be at the hotel yesterday!"

"Yeah, I know. I tried to call you but you weren't home. My flight got cancelled because of bad thunderstorms. Bummer, huh? Anyway, I slept at the airport and caught the next flight in the morning."

"That's bogus."

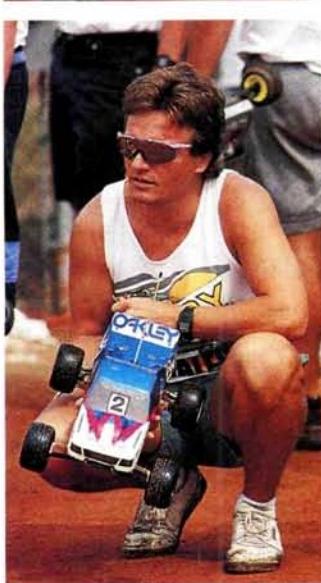
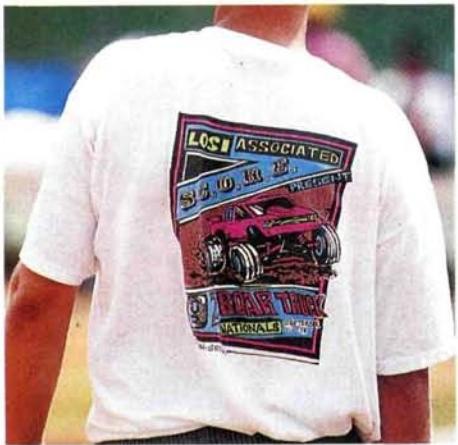
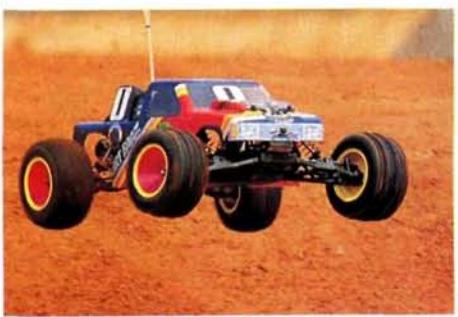
"Tell me about it."

"So were your reservations OK? Did you get your rental car?"

"Yeah, everything's OK, but I have to get back out to the track pretty soon, so let me tell you about what's going on at the Truck Nats."

Smashin' & stylin' in Savannah

"They had some pretty bad rainstorms here all day yesterday, so the area around the track was flooded out. They had to pump a lot of excess water off the track. You should have seen me get the rental car to the track. Total mud-boggin'! It was even worse than what we did to the rental cars in Dallas and Detroit."



roar



TRUCK NATS



ROAR TRUCK NATS

"The Losi mini-pins are working really well on this track."

"Who seemed to be the most dialed-in?"

"I'd have to say Vehlow. His Traxxas truck was pretty smokin'."

"Cool. So is anything happening tonight?"

"No, not really. Everyone I talked to is staying in to work on their trucks for tomorrow. I might grab something to eat with Joel Johnson though."

"I heard that he was going to be there. How's he doing in off-road?"

"Don't ask! Actually, he's just out there for fun, but he's getting punted pretty badly. He's in the stock B-Main and the mod D-Main."

"Anyone else running well?"

"Yeah, Jack Johnson is up there, and so is Lett. Ron Rossetti is doing pretty well, too. He

made the stock A-Main and the mod B-Main."

"Sounds good. How's the race being run? Is everything going smoothly?"

"Everything is going great, so far. You know the Colonel, right? The guy who's running the race?"

"Yeah. He's a character, isn't he?"

"You could say that. He's really cool, and the people love him here. He definitely runs a good race."

"Last year's Off-Road Nats went smoothly too."

"So far, so good. I'm gonna get going now. I'll call you tomorrow and tell you who won."

"All right. I'll talk to you tomorrow night."

CLICK.

RACE DAY

September 6th, 5:51 pm

Ring... Ring... Ring...

"Hello?"

"Frank, it's me again."

"So tell me. Who won?"

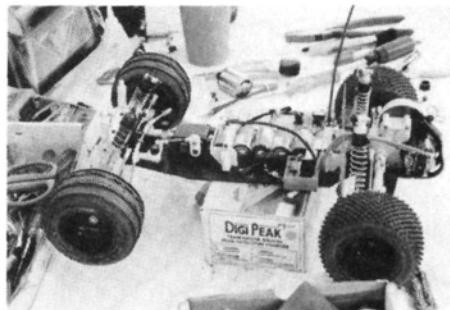
"It was really good racing."

"Who won?"

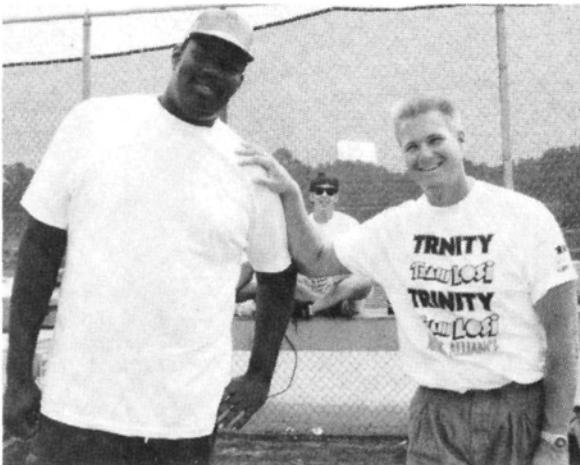
"It was really good racing."

"Come on man, just tell me who won."

"OK, OK. In the first stock-class A-Main, Pavidis jumped out to an early lead and Rick Hohwart and Junior followed right behind him. Rossetti, Reed and Jack Johnson were battling behind the leaders. After a few laps, Reed slipped up a few notches into third place, and he followed Pavidis and Hohwart to the finish.



Here's an inside look at Rick Vehlow's truck that TQ'd in the modified class. Unfortunately for Rick, the first turn was unkind to him on race day.



Trinity's Joel Johnson stands with his new bodyguard, "Tiny Steve." Actually, Steve Andrews turn-marshalled for the Truck Nats, and he won the grand prize—an RC10T.

"The second A-Main was the 'Kyle Reed show.' He pulled a clean start, while Rossetti and Hohwart battled for second a little farther back. At the end though, Reed took first, followed by J.R. Mitch and Scott Hughes, who moved up to the second and third spots overall. Hohwart dropped to fourth. Rossetti had a few problems and dropped to last place.

"The last stock A-Main was where all the action was. It was pretty stylin'. Since Pavidis won the first one, and Reed won the second, the third was up for grabs. At the start, Reed and Pavidis were side by side. Reed eventually took the lead, but Pavidis was all over him. Johnson passed Todd Lewis for third, and then he set his sights on the leaders. Johnson tried to pass Pavidis, and they tangled. Man, Frank, I'm telling you, you should have heard the crowd booing when they saw that move!"

"Did Johnson really hack on him?"

"Well, Pavidis went a little wide in the turn, then Johnson bullied past him; it looked borderline hackish. But Pavidis did come back and

(Continued on page 152)

STOCK

Fin	Qual	Name	Chassis	Motor	ESC	Radio	Batteries	Charger	Body	Tires (f/r)
1	1	Kyle Reed	Losi LX-T		Novak M1	JR Propo	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi
2	3	Mark Pavidis	Associated RC10T	h	Novak MXc	Airtronics	Reedy SCRC	Novak	Associated	Pro-Line 65/90
3	7	Rick Hohwart	Associated RC10T	a	Novak HPc	Futaba	Orion SCRC	Novak	Dahm's	Losi HT ribs/step pi
4	2	Scott Hughes	Losi LX-T	n	Novak M5	Futaba	Team Smooth	Tekin	Losi	Losi HT ribs/step pi
5	9	Jack Johnson	Losi LX-T	d	Novak HPc	JR	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi
6	10	Gil Losi Jr.	Losi LX-T	o	Novak M1	Futaba	Trinity Pushed	Novak/Victor	Losi	Losi HT ribs/step pi
7	5	J.R. Mitch	Losi LX-T	u	Tekin 600	Airtronics	Team Smooth	Comp. Elec.	Losi	Losi full radius/step
8	8	Todd Lewis	Losi LX-T	t	Tekin 411G	JR	MaxCell	Class	Losi	Losi full radius/step
9	6	Ron Rossetti	Losi LX-T		Novak HPc	Futaba	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi
10	4	Bryan Peterson	Losi LX-T		Novak HPc	Futaba	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi

MODIFIED

Fin	Qual	Name	Chassis	Motor	ESC	Radio	Batteries	Charger	Body	Tires (f/r)
1	2	Mark Pavidis	Associated RC10T	Reedy Mr. A	Novak MXc	Airtronics	Reedy SCRC	Novak	Associated	Pro-Line 65/90
2	4	Rick Hohwart	Associated RC10T	Peak "Animal"	Novak HPc	Futaba	Orion SCRC	Novak	Dahm's	Losi HT ribs/step pi
3	9	Jon Anderson	Losi LX-T	Trinity	Novak M5	Airtronics	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi
4	6	John Walters	Traxxas Eagle LS	Peak 15Q	Tekin	Futaba	Orion SCRC	Comp. Elec.	Traxxas	Losi full radius/step
5	5	Jack Johnson	Losi LX-T	Trinity	Novak HPc	JR	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi
6	8	Gary Guest	Traxxas Eagle LS	Precision 15Q	Novak M1c	Airtronics	Wolfpack SCRC	Tekin	Traxxas	Losi HT ribs/step pi
7	3	Paul Wynn	Associated RC10T	Redline	Tekin 411G	Airtronics	Team Smooth	Novak	Associated	Pro-Line 65/90
8	10	Bryan Peterson	Losi LX-T	Trinity	Novak HPc	Futaba	Trinity Pushed	Novak	Losi	Losi HT ribs/step pi
9	7	Scott Hughes	Losi LX-T	Twister	Novak M5	Futaba	Team Smooth	Tekin	Losi	Losi HT ribs/step pi
10	1	Rick Vehlow	Traxxas Eagle LS	Peak	Novak HPc	Airtronics	Orion SCRC	Novak	Traxxas	Losi full radius/step

ROAR TRUCK NATS

"Are you sure about that?"

"Well, maybe not. But you should see this place, Frank. I'm tellin' you, it's mud-bog city. And listen to this: the track is near a lake, so there are ducks and geese *everywhere*. Not only is it muddy, but we're all walking around in a ton of floppily green duck s@#*. It's pretty foul."

"That's disgusting!"

"Tell me about it. Anyway, I got to the track and watched practice. Kyle Reed and Rick Vehlow were tearing up the track."

"Who else looked good?"

"Mark Pavidis, Rick Hohwart and Jon Anderson all looked good. Gil Losi Jr. [Junior] is running pretty good too, but he lost his voice. You should hear him; it's classic."

"So is there any trick new stuff hitting the tracks?"

"Yeah, Losi has a prototype tranny for its trucks. It's an all-new three-gear design. It's so much narrower than the stock tranny. So far, it's working great for them."

"That sounds cool. Shoot a lot of pictures of it, OK?"

"Don't worry; I already snapped a whole roll of film."

"What else is new? Anything?"

"There are a few things that are pretty cool. You know the new suspension components that Cliff Lett told us about for the 10T? Well, all the guys are running them on their trucks now."

"I also snagged a few shots of Mike Dunn's new Race Prep stock motor. Wait until you see this thing; it's really trick. There's an accessory line-up for it that even includes an endbell air filter. So far, that's all the trick stuff I've seen. I'll let you know if I see anything else."

"Give me a call tomorrow, if you can."

"Sounds good."

CLICK.

QUALIFYING

September 5th, 6:44 pm

Ring... Ring... Ring...

"Hello?"

"Frank, it's me again."

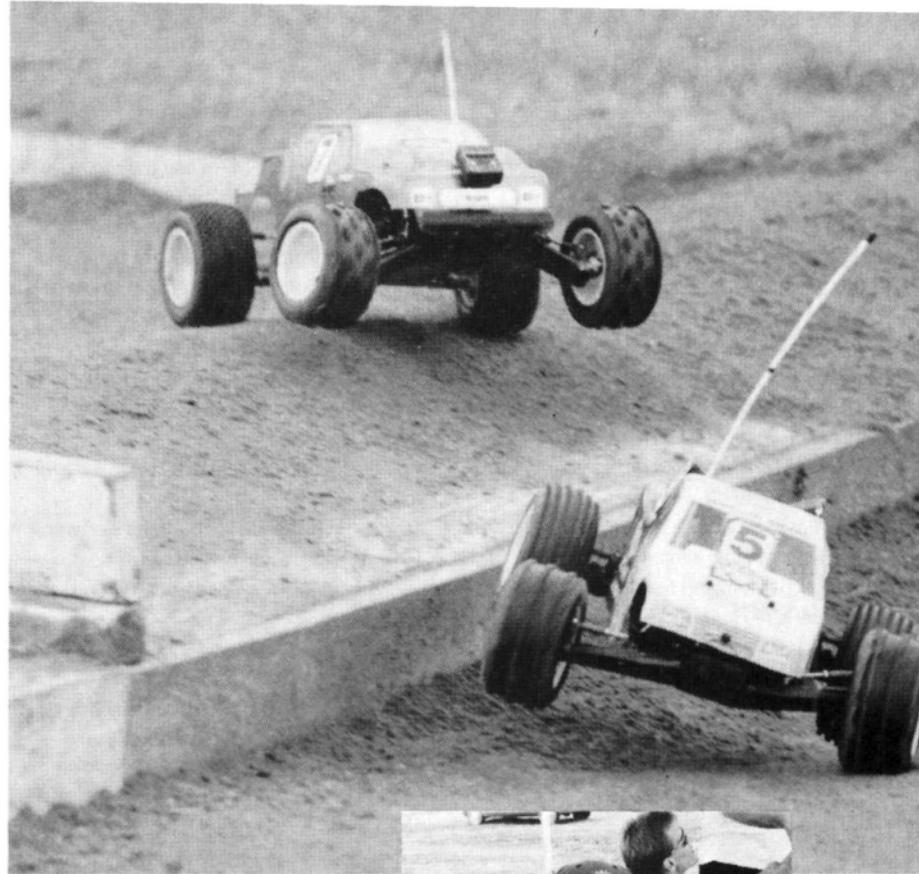
"Hey, John. How did qualifying go?"

"Pretty good. Reed took the top spot in the stock class, and Vehlow was the fastest in mod. I took some shots of both trucks, too."

"What about Associated?"

"They were a little slow in the beginning, but they're starting to come up to speed. Pavidis looked really good out there. I got some funny shots of him and Lett playing tennis."

"So, what's the hot setup, tire-wise?"



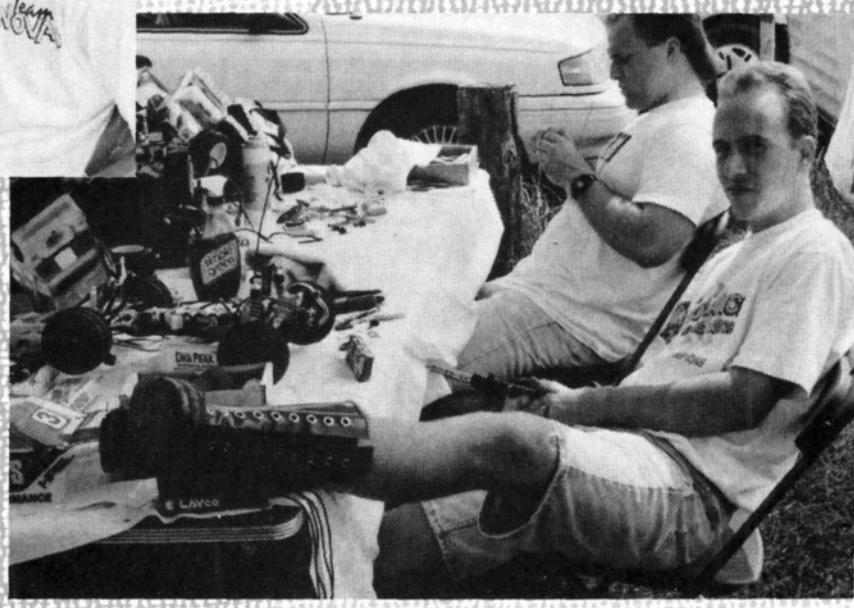
Although the track's surroundings were less than desirable, the track itself was groomed perfectly throughout the weekend.



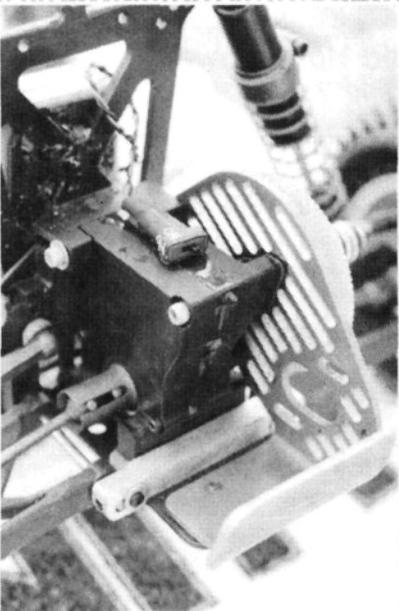
Team Losi MVP, Kyle Reed, kicks back between heats. Kyle won the stock class overall.



Novak
Electronic
Tyre Phillips
plays a crucial
part in technical support for Team Novak's drivers; he makes sure that everything runs smoothly.



Rick Vehlow had to show us the way to get through the mud. Notice his fancy footwear!



PROTOTYPE LOSI TRANNY

While walking through the Team Losi pits, I spotted this prototype tranny in a few LX-Ts. After a quick tug-of-war with Gil Losi Jr. and Jack Johnson, I finally wrenched my camera bag free and shot a few photos. Then, I got the scoop straight from Gil: the tranny is a three-gear design with the diff on the bottom. Both sides of the interchangeable diff are the same. The tranny uses "keyed" diff rings and a sealed thrust assembly to keep the dirt out. The diff is externally adjustable and there aren't any plugs, upper links, or dogbones to remove while adjusting it. The top shaft accepts the Hydra Drive slipper, and the tranny uses the stock motor plate. According to the head Losi honchos, the new tranny enables the truck to hook-up better, turn more easily and accelerate more quickly. There's an overall gain in top-end speed, too. The tranny allows the use of different gears to interchange ratios—2.19 for buggies and 2.61 for trucks. Look for this tranny to hit the shelves soon.

**RACE
PREP
STOCK
MOTOR**

Race Prep's Mike Dunn showed up at the Truck Nats with one of his new stock motors. The motor, though still a prototype, has a narrow split rotor, sealed



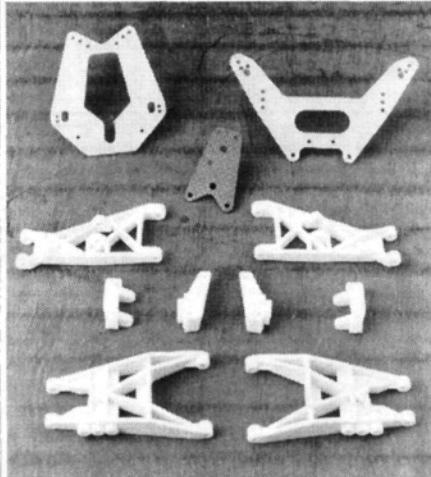
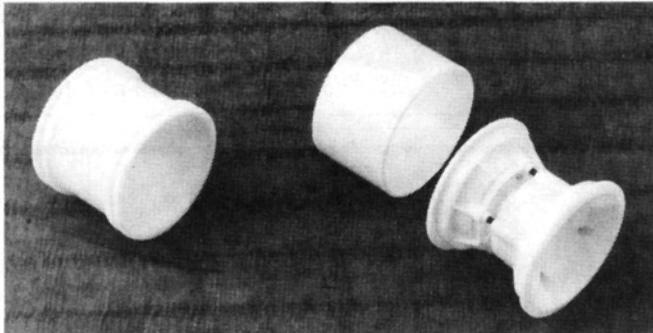
bushings and air-flow ports. It will be

available in 24- and 38-degree timing. The \$28 motor will be made in the U.S., and it will come with an endbell air filter. A few of the Team Losi boys have been testing it, and they say that it really moves.

what's new in the pits

**ASSOCIATED'S
ONE-PIECE
RIMS**

Also new from Associated are light, one-piece rims for the 10T (left). The new rims, which are for diehard racers, decrease rotating mass, and they're lighter than the standard three-piece rims that are included in the kit (right). The three-piece rims are geared toward those who don't want to throw out rims every time they change tires.



Sponsors

Team Losi, Trinity, Novak, Oakley, Race Prep, JR, Tecnacraft, Dirt Bagz, Skull Racing
Associated, Reedy, Pro-Line, Novak, Airtronics, Oakley, RCPS, HPI
Peak Performance, Team Orion, Associated, Futaba, Novak, RCPS, Pro-Line, PSE
Team Losi, Twister, Futaba, Lunsford, M-n-M Hobbies, Team Smooth
Team Losi, Trinity, Novak, JR, Tecnacraft, Oakley, Neal's Nuclear Motor Prep
Team Losi, Trinity, Novak, Futaba, Jammin, Oakley
Team Losi, Redline Motors, Team Smooth
Team Losi, Jammin' Jay, MaxCell, JR Propo, Class, CA Motorworks
Team Losi, Trinity, Novak, Futaba, Andy's, Tecnacraft, Jon & Junebug's Bike & Machine Shop, Jammin
Team Losi, Trinity, Futaba, Novak, Jammin, Lunsford

Sponsors

Associated, Reedy, Pro-Line, Novak, Airtronics, Oakley, RCPS, HPI
Peak Performance, Team Orion, Associated, Futaba, Novak, RCPS, PSE, Pro-Line, Team Tracy
Team Losi, Trinity, Novak, Airtronics, Tecnacraft, Jammin, Ranch Pit Shop
Traxxas, Peak Performance, Team Orion, Tekin, HPI
Team Losi, Trinity, Novak, JR, Tecnacraft, Oakley, Brigitte's Babooshka Club
Traxxas, Precision Motorworks, Wolfpack Batteries, R/C Racing Center, Team Tom
Redline, Associated, Airtronics, RCPS, Tekin, Team Smooth, Saiko, Bolink, Jaco, Pro-Line, Rainbow Riders
Team Losi, Trinity, Futaba, Novak, Jammin, Lunsford
Team Losi, Twister, Futaba, Lunsford, M-n-M Hobbies, Team Smooth
Traxxas, Peak Performance, Novak, Airtronics, Orion, Lunsford, RCPS

ASSOCIATED'S SUSPENSION COMPONENTS

In the Associated pits, I talked with Cliff Lett about the new RC10T components. The new parts have thicker, more rigid front and rear shock towers with extra shock-mounting positions; beefed-up front and rear suspension arms are also available. New 30-degree caster blocks make the truck a little more forgiving and easier to drive, while a graphite tranny brace makes the rear end more rigid. A different rear-arm mount and rear hub carriers alter rear toe-in. The hub carriers shown in this photo are from the buggy kit that Mark Pavlidis used on his 10T en route to capturing the modified Truck title.

Track Directory

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ALABAMA

Dixie R/C Speedway, Rt. 10, Box 210, Gadsden, AL 35901; Craig Reynolds, (205) 442-1059



Fleming's R/C Raceway, 169 Raceway Dr., Wellington, AL 36279; Phil Fleming, (205) 820-6269



Main Street Raceway, 156 Main St., Trussville, AL 35173; Paul Spivey, (205) 655-3868



Oak Mountain Raceway & R/C Club, 2624 Janice Circle, Birmingham, AL 35235; Will Barrett, (205) 856-7051



Performance Hobby, 2600 A Beltline Rd., Decatur, AL 35603; Tom & Faye Rozicki, (205) 353-3399



Piedmont R/C Superspeedway, 41 Jewel Lane, Oxford, AL 36203; Terry Young or Greg Gaines, (205) 831-2986 or 831-1666



R&J's Raceway, County Rd. 236, Trinity, AL 35643; Rodney Porter, (205) 351-6259



R/CHi-Tech Raceway, 3303 Meridian St., Huntsville, AL 35811; Rick Chambers, (205) 539-1347



Satellite Hobbies, 2799 Rose Rd., Albertville, AL 35950; Troy or Jerry Smith, (205) 878-2526



ALASKA

ARCORR, 2812 Spender Rd., Anchorage, AK 99503; Jim Raffuse, (907) 277-7778



McKinley Hobby & Raceway, 2300 McKinley Dr., Wasilla, AK 99654; (907) 376-9351



Seth's Speedways, 3400 Hiland Dr., Anchorage, AK 99504; Seth Graham, (907) 337-3777



Southtown Hobby & Raceway, 12001 Industry Way #2, Anchorage, AK 99515; Bob or Vickie Peters, (907) 345-3131

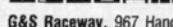


ARIZONA

Economy One-Stop Raceway, 4000 S. Ave., Yuma, AZ 85366; (602) 344-3514



Finish Line Raceway, 7025 E. 21st St., Tucson, AZ 85710; Jerry Kikkert, (602) 747-3633



G&S Raceway, 967 Hancock, Bullhead City, AZ 86442; Bob Olsen, (602) 758-1100



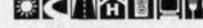
Havasu R/C Raceway, 1081 Desert View Dr., Lake Havasu City, AZ 86403; Bernie Coates, (602) 680-6304



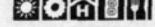
HobbyTown Raceway, 9180 E. Indian Bend Rd., Scottsdale, AZ 85250; Dennis, (602) 948-3946



HobbyTown Raceway, 1915 East Baseline Rd., Gilbert, AZ 95234; Kenny, (602) 892-0405



Outlaw Raceway, 5309 Lakewood Rd., Ft. Mohave, AZ 86427; Frank Greely, (602) 768-5001



Overmyer's Speedrome, P.O. Box 541, Bullhead City, AZ 86430; Sarge Overmyer, (602) 758-2463



R/C Raceplex, 5222 W. Glendale Ave., Glendale, AZ 85301; Bill Murray, (602) 934-5567



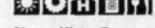
R/C Sports Mania, 3550 N. 35th Ave., Phoenix, AZ 85017; (602) 996-4668



Race Prep Raceway, 852 S. Hwy. 89, Chinle Valley, AZ 86323; Mike Dunn, (602) 636-1955



Scale Racing Sports, 1120 N. Hayden Rd., Tempe, AZ 85281; Mike, (602) 829-9117



Sierra Vista Raceway, 105 N. Central Ave., Sierra Vista, AZ 85635; Wayne Tuthill Sr., (602) 459-1335



Speedway Hobbies, 1000 N. Humphreys St., #204, Flagstaff, AZ 86001; Gary McAllister, (602) 556-0710



ARKANSAS

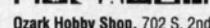
AERCC, Vimy Ridge Rd., Little Rock, AR; (501) 945-7037



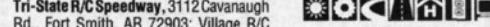
Arkansas Int'l. Superspeedway, P.O. Box 1636, Pine Bluff, AR 71613; Joe Pitts, (501) 247-2371



DCA Racing, 412 Hiway & 14th St., Paragould, AR 72450; Lyle Spillman, (501) 236-9706



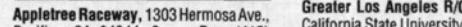
Fast Eddie's R/C Raceway, 3261 Edward Ave., Santa Clara, CA 95054; Eddie Aflague, (408) 986-8256



Fast Lane, 25845 San Fernando Rd., #21, Saugus, CA 91350; (805) 255-2404



Frogtown R/C Raceway, Motherlode Hobies, 3069 Hwy. 49, Angels Camp, CA 95222; (209) 738-4989

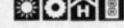


Greater Los Angeles R/C Racing Club, California State University, Parking Lot A, Los Angeles, CA 90045; Glenn Williams, (213) 734-7888 or Tom Wong, (310) 821-5472



CALIFORNIA

AppleTree Raceway, 1303 Hermosa Ave., Pacifica, CA 94044; Sonny Day, (415) 359-9755



ARO Hobbies Raceway, 24275 Sunnymead, Moreno Valley, CA 92553; George or Mike Kileen, (714) 924-3240



Art & Dean Raceway, 29409 Haquest, Lake Elsinore, CA 92530; Art, (714) 245-0920



Bob & Jim's R/C World, 3485 University Ave., Riverside, CA 92501; Bob Parcell, (714) 684-6314



Brake-a-way Raceway, 3179 Hammer Ave., Norco, CA 91760; Debbie Burrie, (714) 736-6063



California Auto Racers (CAR), 96 San Tomas Aquino Rd., Campbell, CA 95008; Club Message Line, (415) 508-9971



Cats West Raceway, 5631 Old Lonetree Way, Antioch, CA 94509; Jerry Winkelman, (510) 779-0505



City Speedway, 7750 Convoy Ct., San Diego, CA 92111; (619) 560-9633



Cloverdale R/C Raceway, 1 Citrus Fair Dr., Cloverdale, CA 95425; Tom Kelley, (707) 586-9789



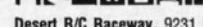
Covina Racing Company, 1611 W. San Bernardino Rd., Covina, CA 91722; Tom, (818) 331-4984



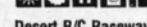
Cycle Art Raceway, 2211 N. Pleasant Way, Fresno, CA 93705; Richard De Benedictis, (209) 233-3665



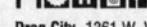
D&D Raceway, 290 S. First St., Turlock, CA 95380; Dave Miller, (209) 667-0970



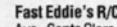
Desert R/C Raceway, 9231 E. Hobson Way, Blythe, CA 92225; Rodney Lazenby, (619) 922-5516



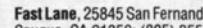
Desert R/C Raceway, 39360 3rd St. E., Ste. 305, Palmdale, CA 93550; (805) 272-1835



Drag City, 1361 W. Valley Blvd., Colton, CA 92324; Chris Gabriel, (714) 370-0580



Fast Eddie's R/C Raceway, 3261 Edward Ave., Santa Clara, CA 95054; Eddie Aflague, (408) 986-8256



Fast Lane, 25845 San Fernando Rd., #21, Saugus, CA 91350; (805) 255-2404



Frogtown R/C Raceway, Motherlode Hobies, 3069 Hwy. 49, Angels Camp, CA 95222; (209) 738-4989



Greater Los Angeles R/C Racing Club, California State University, Parking Lot A, Los Angeles, CA 90045; Glenn Williams, (213) 734-7888 or Tom Wong, (310) 821-5472



Hayes Raceway, 628 Walnut Ave., Patterson, CA 95363; Andy Hayes, (204) 892-5080



Hobby Haven Raceway, 3983 First St., Livermore, CA 94550; Tom Welding Jr., (510) 443-5828



Hobbycrafters Raceway, 323 Five Cities Dr., Pismo Beach, CA 93449; (805) 773-6765



Hobbytown Raceway, 1330 Keystone Way, Vista, CA 92803; Bryan Bahmann, (595)-0456



Hobby Warehouse, 5500 So. Watt, Sacramento, CA 95828; Roger Hubbard, (916) 381-7587



Jackman's R/C Raceway, 1616 N. Beale Rd., Marysville, CA 95901; Bonnie or Harry Jackman, (916) 741-3744



Jones R/C Track, Riverside, CA 92505; Dustin Biber, (714) 689-6808



K&M R/C Raceway, 22474 A Barton Rd., Grand Terrace, CA 92324; Mike Blake, (714) 783-0899



The Land of R/C, 2717 Gerber Road, Suite B, Woodland, CA 95695; Le Forrest, (916) 666-1699



Lindsey's R/C Raceway, P.O. Box 443, Doyle, CA 96109; (916) 827-2457



Lucerne Valley Raceway, 32800 #4 Old Woman Springs, Lucerne Valley, CA 92356; Frank Rodriguez, (619) 248-7305



M.B. Raceway, 1031 Fremont, Alhambra, CA 91801; Tony or Dave, (818) 284-4198



M'n'M Hobbies, 710 E. Parkridge, Corona, CA 91719; Don Hughes, (714) 272-3545



Merced R/C Auto Racers (MRCAR), 1652 W. North Bearcreek Dr., Merced, CA 95348; Ed Lopez, (209) 725-8040



My Hobby Shop, 1525 Farmers Ln., Santa Rosa, CA 95405; Mike, (707) 571-1700



One-Stop Raceway, 3782 Cerritos Ave., Los Alamitos, CA 90720; (213) 493-7597



Outlaw R/C Hobbies, 7920 Webster, Highland, CA 92346; Rick James, (909) 864-1770



Paso Robles R/C, P.O. Box 3795 (3980 Linne Rd.), Paso Robles, CA 93447; (805) 237-0624



Radio-Controlled Hobbies, 2011 Placentia Ave., Costa Mesa, CA 92630; (714) 631-1555



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	Outdoor
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	Oval
	Dirt oval
	Carpet
	Concrete
	Asphalt
	On-site hobby shop
	AC power
	Auto lap-counting
	Food available

Track Directory

RnR Hobbies, 701 E. Ave. I, Lancaster, CA 93534; Robert or Ron, (805) 949-1552



Robin's Racing World, 1844 W. Glenoaks, Glendale, CA 91201; (818) 240-2093



Roy's Raceway, 368 E. 11th St., Tracy, CA 95516; (209) 836-3513



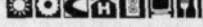
Sacramento Mini-Wheels Raceway, 8711 Elder Creek Rd., Sacramento, CA 95828; Paul Schiager, (916) 383-4011



San Diego R/C Car Club, P.O. Box 232456, San Diego, CA 92193; (619) 560-0089



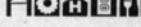
Square Roundhouse R/C Speedway, 1468 Lander Ave., Turlock, CA 95380; (209) 568-4454



SRS Raceway, 915 N. Main St., Salinas, CA 93906; (408) 424-4044



Tyler's RC/RD Racing Center, 6865 Flanders #D, San Diego, CA 92121; (619) 597-3072



Valley R/C Race Park, 146 S. Santa Fe St., Hemet, CA 92344; Valley Wide Recreation, (714) 654-1505 or 658-4322



Ventura Road Runners/Freedom Park Raceway, 520 Freedom Park, Camarillo, CA 93010; Les Abramson, (805) 484-8920 or Ed Haney, (805) 499-8266



White Mountain R/C Raceway, 174 West Line, Bishop, CA 93514; (619) 872-1599



Yorba Linda R/C Speedway, 3780 Prospect #B, Yorba Linda, CA 92685; David Landier, (714) 572-2175



COLORADO

Action R/C Raceway, 4939 N. Broadway #57, Boulder, CO 80304; (303) 440-0330



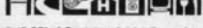
Colorado R/C Speedway, 6520 Wadsworth Blvd., #130, Arvada, CO 80003; (303) 425-1718



MHOR R/C Raceway, 15540 E. Batavia Dr., Aurora, CO 80011; Jess Brockman, (303) 343-0151



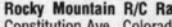
Miracle R/C Speedway, 4206 Wadsworth Blvd., Wheatridge, CO 80034; Rob Grossman, (303) 420-3051



R/C Mini Sports, 6401 Broadway, Unit G, Denver, CO 80223; Bernie Stolzman, (303) 650-2500



R/C World & Track, 2788 S. Federal Blvd., Denver, CO 80236; (303) 789-0838



Rocky Mountain R/C Raceway, 5737 Constitution Ave., Colorado Springs, CO 80915; Lee Seigel, (719) 550-1777



CONNECTICUT

Craftech Raceway, Navibase NLON Box 14, Bldg. 460, Groton, CT 06349; Dave or Tony, (203) 449-3217



East Hartford R/C Speedway, 52 Village St., East Hartford, CT 06108; Bob Matulis, (203) 528-8566



High-Tech Raceway, 375 Enfield St., Enfield, CT 06082; (203) 745-8488



Hobby World Raceways, 161-6 Woodford Ave., Plainville, CT 06062; (203) 793-1111



JP's Hobbies & Track, 54 Wakelee St. Ext., Seymour, CT 06483; (800) 547-5772



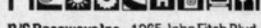
K/N R/C Speedway Inc., West St., Stafford Springs, CT 06076; (203) 684-9896



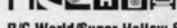
NERCAR, 36 Glendale Rd., Enfield, CT 06082; Phil Olsson, (203) 627-5410



R/C Madness, 640 Enfield St., P.O. Box 64, Enfield, CT 06082; Christopher Marcy, (203) 741-6501



R/C Raceways Inc., 1265 John Fitch Blvd., South Windsor, CT 06074; (203) 528-3661



R/C World/Sugar Hollow Speedway, 66 Sugar Hollow Rd., Danbury, CT 06810; (203) 748-2185



SCORA/Clayton's Off-Road Racing, 141A Middletown Ave., North Haven, CT 06473; Craig or Keith, (203) 234-CLAY



Tec Tron's R/C Stadium, 52 Village St. E., Hartford, 06108; (203) 289-8119



Wallingford Indoor Racing, 63 N. Cherry St., Wallingford, CT 06492; (203) 265-3939



DELAWARE

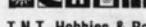
Hobby Works Raceway, Hamlet Shopping Center, Dover, DE 19901; Steve or Gordon, (302) 674-9123



Mills Raceway, RD 2 Box 83D-8, Milford, DE 19963; Mike Roe, (302) 422-6766



T&C Raceway, Rt. 113 South, Georgetown, DE 19947; Sam Thompson Jr., (302) 856-3804

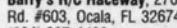


T.N.T. Hobbies & Raceway, 609 Stein Hwy., Seaford, DE 19973-0464; Thorpe Shatney, (302) 628-0520

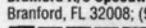


FLORIDA

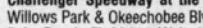
B+T R/C Central, 811 Playground Rd., Ft. Walton Beach, FL 32547; (904) 863-2666



Barry's R/C Raceway, 2701 SW College Rd. #603, Ocala, FL 32674; Barry Lees, (904) 237-4400



Branford R/C Speedway, Rt. 3, Box 240, Branford, FL 32008; (904) 935-0758



Challenger Speedway at the Willows, Willows Park & Okeechobee Blvd., Royal Palm Beach, FL 33414; Walt, (407) 965-2790 or Mark, (407) 790-6917



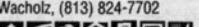
PBG R/C Motorpark, 4399 Lilac St., Palm Beach Gardens, FL 33410; Doug Gleason, (407) 624-9252



Coral Springs Roadrunners, P.O. Box 9632, Coral Springs, FL 33075; Tom Allison, (305) 721-0344 or Rick Schwartz, (305) 344-1983



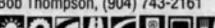
Doc's Indoor Raceway, 4700 110th Ave. N, Clearwater, FL 34622; Steve "Doc" Wacholz, (813) 824-7702



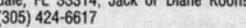
5-Flly-5 Raceway, County Rd. 555, Bartow, FL 33830; Chuck Nolke, (813) 324-7406



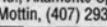
First Coast International Speedway, P.O. Box 1342, Jacksonville, FL 32201-1342; Bob Thompson, (904) 743-2161



Ft. Lauderdale R/C Speedways, 2201 22nd 9th Ave., Mills Pond Park, Ft. Lauderdale, FL 33314; Jack or Diane Koons, (305) 424-6617



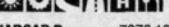
Greater Orlando Auto Racers, 970 Keller Rd., Altamonte Springs, FL 32714; Dave Motton, (407) 293-7090



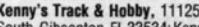
H&H Raceway, 4121 S. Tamiami Tr., Sarasota, FL 34231; (813) 922-7711



Hialeah Hobby Raceway, 4562 W. 12 Ave., Hialeah, FL 33015; (305) 826-3702



JARCAR Raceway, 7273 103rd St., Jacksonville, FL; Rob Kruse, (904) 272-6315



Kenny's Track & Hobby, 11125 U.S. 41 South, Gibsonton, FL 33534; Kenny Ryals, (813) 671-9123



Lake Whippoorwill International Speedway, 12345 Narcoossee Rd., Orlando, FL 32827; Bob Hosch, (407) 277-9586; fax (407) 277-2568



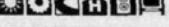
Lou's R/C Hobbies & Raceway, 1512 SE Village Green Dr., Port St. Lucie, FL 34952; (407) 337-9000



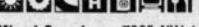
M&M R/C Raceway, 16921 Waterline Rd., Bradenton, FL 34202; Mike Williams, (813) 747-2889



Martin County Championship R/C Speedway, 2953 S.E. Ellendale St., Stuart, FL 34997; Jerry Landry, (407) 220-1816



McBiffy R/C Raceway, 3rd St., Center, Cedar Key, FL 32625; Wilbur McBiffy, (904) 543-5628



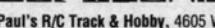
Miami Speedway, 7805 NW 148th St., Miami Lakes, FL 33014; Julio Romero, (305) 687-6728



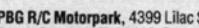
Ocala R/C Car Club, P.O. Box 70166, Ocala, FL 32670; Larry E. Mitchell, (904) 245-2609; Steve Shook, (904) 694-5147



Oceanside Raceway, 206 E. Eau Gallie Blvd., Indian Harbour Beach, FL 32937; Michael Kelly, (407) 242-0434



Paul's R/C Track & Hobby, 4605 W. Cypress St., Tampa, FL 33614; Paul or Eula Surrette, (813) 872-8662



Good Life City Raceway, 6606 Newton Rd., Albany, GA 31707; (912) 888-2515



Lake Mayer Raceway, 1 Melinda, Savannah, GA 31460; Phil Hurd, (912) 355-6033



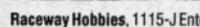
Performance Plus Raceway, 2820 SE 62 St., Ocala, FL 34481; Charlie Floyd or Cari Ross, (904) 867-5557



Pro Hobbies Speedway, 715 N. Lake Pleasant Rd., Apopka, FL 32712; (407) 886-4615



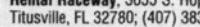
R/C Action, 646 Choy Lee Circle, Orlando, FL 32708; (407) 695-6746



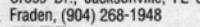
Raceway Hobbies, 1115-J Enterprise Ct., Holly Hill, FL 32117; (904) 258-7537



Ray's Track & Hobby, 4605 W. Cayuga St., Tampa, FL 33614; (813) 872-8662



Rental Raceway, 3655 S. Hopkins Ave., Titusville, FL 32780; (407) 383-0631



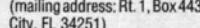
River City R/C Car Club, 9711 Sharing Cross Dr., Jacksonville, FL 32257; Bill Fraden, (904) 268-1948



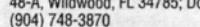
St. Augustine R/C Speedway, 99 Masters Dr., St. Augustine, FL 32095; (904) 824-6357



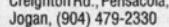
Space Coast Raceway, 563 Barton Blvd., #17, Rockledge, FL 32955; Bill Pinch, (405) 631-4373



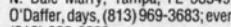
Sun Valley Speedway, Palmer Blvd., Sarasota, FL 34232; (813) 322-1200; (mailing address: Rt. 1, Box 443N, Myakka City, FL 34251)



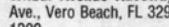
Three Flags R/C Racetrack, Rt. 2, Box 48-A, Wildwood, FL 34785; Don Meares, (904) 748-3870



TJ's R/C Raceway & Hobby Shop, 1010 Creighton Rd., Pensacola, FL 32504; John Jogan, (904) 479-2330



West Coast R/C Club, Lake Park, 17203 N. Dale Mary, Tampa, FL 33549; Tim O'Daffer, days, (813) 963-3683; evenings, (813) 239-9630



Wilbur Avenue Raceway, 1848 Wilbur Ave., Vero Beach, FL 32960; (407) 567-1200



GEORGIA

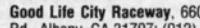
Carnesville R/C Speedway, Rt. 2, Box 2354, Carnesville, GA 30521; Bobby Maxwell or Byron Sartain, (404) 384-4870 or 384-4587



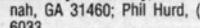
Case R/C Raceway, P.O. Box 1061, Tren-ton, GA 30752; (404) 657-6789



Dalton Raceway, 2300 Chattanooga Rd., Dalton, GA 30720; (404) 226-6699



Georgia Hobby Center, 112 Kenwood Rd., Fayetteville, GA 30214; (404) 460-1753



Good Life City Raceway, 6606 Newton Rd., Albany, GA 31707; (912) 888-2515



Lake Mayer Raceway, 1 Melinda, Savannah, GA 31460; Phil Hurd, (912) 355-6033



CONNECTICUT

Middle GA Slot Car, 1805A Watson Blvd., Warner Robins, GA 31088; Larry Tucker, (912) 922-RACE

PDQ Raceway & Hobbies, 341 Senoia Rd., Peachtree City, GA 30269; Richard Burdett, (404) 631-1788

Peach Bowl R/C Speedway, 2035 Westside Ct., Snellville, GA 30278; (404) 985-1448

The Racer's Edge, 1530 Hwy. 19 North, Thomaston, GA 30286; Mark or Roger Walls, (404) 648-6534

Sandy Cross Speedway, Rt. 1, Box 1073, Royston, GA 30652; Morris Phillips or Wayne Fowler, (404) 245-9573

Silver Wings Raceway, 5611 Riverdale Rd., College Park, GA 30349; (404) 991-2225

Sugar Bowl R/C Speedway, 5272 North Ave., Sugar Hill, GA 30518; Shelley or Jan Bailey, (404) 945-6709

HAWAII

The Hobby Habit, c/o 70 Kaahumanu Ave., Kahului, Maui, HI 96732; Blaine or Teri Ferreira, (808) 871-6666

K/M's Hobbies, 2305 Jasmine St., Honolulu, HI 76816; George Mirikirana, (808) 757-7135

R/C Motorsports Hawaii, 98-029 Hekaha St., Alea, HI 96701; Lane Petrich, (808) 487-5155

Team PRC Racing Club, Pahoa Government Rd., Pahoa, HI 96778; Charlie Kawamoto, (808) 965-8216

IDAHO

Falls Hobbies & R/C Raceway, 1515 Northgate Mile, Idaho Falls, ID 83401; (208) 529-8650

ILLINOIS

Adam's Blast Track, RR 1, Box 370, Ashmore, IL 61912; John Deffenbaugh, (217) 349-8447

AJ's Raceway, Kesslinger Road, Dekalb, IL 60115; AJ Schultz, (815) 756-2772

Ameri-Trac, R.R. 3, Box 242, Mattoon, IL 61938; (217) 234-8707

Badlands II, 320 W. Jackson St., Vandalia, IL 62471; (618) 283-2913

BARR, 809 River Dr., Byron, IL 61010; Jim Haynes, (815) 234-5615

C&R Hobbies, 39 E. Jones, Milford, IL 60953; Ray Craighead, (815) 889-4073

Central Illinois R/C Car Club, contact Ron Buhl, 109 Oliver N., Pekin IL 61554; (309) 382-2591 or Randy House, 510 S. 10th, Pekin, IL 61554; (309) 347-4912



Central R/C Raceway, RR 2, Box 51-A, Carlinville, IL 62626; Tim Stewart, (217) 854-9718 or Don Rice, (217) 854-3785



Diehard R/C Raceway, 300 N. Main, Kewanee, IL 61443; Dick Jennings, (309) 852-3700



Eagle Speedway, 303 N. Plum, Pontiac, IL 61764; Joe or Vickie Bachman, (815) 842-1738



Hobby Raceway, 5027 4th Ave., Moline, IL 61265; Tony, (309) 755-5534



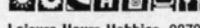
Hoopy Town Raceway, 4611 W. Rt. 120, McHenry, IL 60050; Mike Hollingsworth (815) 344-1777



JC Hobbies/Metro Motor Speedway, Metropolis Airport, Metropolis, IL 62960; (618) 524-9979



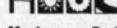
JMP Raceway, 952 Harrison Ave., Wood River, IL 62095; (618) 258-0297 or -0282



Leisure Hours Hobbies, 2872 Plainfield Rd., Joliet, IL 60435; (815) 439-1477



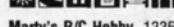
Lisle Community Park Raceway, 1825 Short St., Lisle, IL 60532; Jim Bernicky, (708) 416-6944



Machesney Park, 1220 Shappert Dr., Machesney Park, IL 61111; (815) 282-1311



Magnum R/C Speedway, RR #2, Box 399, Danville, IL 61832; Terry & Nancy Dines, (217) 446-2472



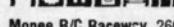
Marty's R/C Hobby, 1335 E. Broadway, Bradley, IL 60915; Gail or Marty, (815) 933-8441



Mercer Co. R/C Off-Road, RR 3 Box 259, Milan, IL 61264; Jamie Wagal, (309) 534-8324



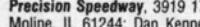
Midwest Hobby Trax, 114 Kirkland Cr., Unit A, Oswego, IL 60543; Duane Pierson or John Koonce, (708) 978-RACE



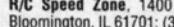
Monee R/C Raceway, 26049 Ridgeland Ave., Monee, IL 60449; (708) 534-2422



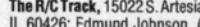
Peoria R/C Raceway, 518 Hillsdale Ave., Peoria, IL 61604; Ray Tigue, (309) 672-1780



Precision Speedway, 3919 17 St., East Moline, IL 61244; Dan Kennedy, (309) 796-2226



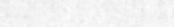
R/C Speed Zone, 1400 E. Lafayette, Bloomington, IL 61701; (309) 662-RACE



The R/C Track, 15022 S. Artesian, Harvey, IL 60426; Edmund Johnson, (708) 331-4079



Radio Active Raceways, 751 N. Bolingbrook Dr., #15, Bolingbrook, IL 60440; Jim or Lenny, (708) 759-7557



Redline Raceway, 921 Harding, Calumet City, IL 60409; (708) 862-8181



Rick's R/C Raceway, 122 W. 12th St., Streator, IL 61364; Rick Wallace, (815) 673-1870



Rockford Scale Raceway, 6900 N. 2nd St., Machesney Park, IL 61111; (815) 765-2970



SIRCAR Raceway, 1200 N. Marion, Carbondale, IL 62901; (618) 549-5885



Slot Wing Hobbies Race Place, 1615 W. Springfield, Champaign, IL 61821; (217) 359-1920



Smithton Community Park, P.O. Box 8152, Belleville, IL 62221; (618) 236-7569



Superior Raceway, 1706 W. Bradley, Champaign, IL 61821; (217) 359-8073



Thunderroad Speedway, Intersection of Broadway and Division, Coal City, IL 60416; (815) 634-2540



Valley Farms R/C Raceway, 706 Bypass 20, Cherry Valley, IL 61016; (815) 332-4516



INDIANA

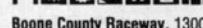
Autograph/Race World, 721 Pendleton Ave., Pendleton, IN 46064; Sam Mudd, (317) 778-3386



BJ's Riverside Raceway, 265 S. Clay St., Jasper, IN 47546; Joe Lorey, (812) 482-3484



Blaze'n Race'n, P.O. Box 6, Hamlet, IN 46532; James Berndt, (219) 867-1324



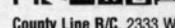
Boone County Raceway, 1300 E. 100 S. Rd., Lebanon, IN 46052; Jerri Moss or Allan Luper, (317) 482-4827



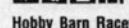
CC Hobby & Speedway, RR 1, Box 68, Francesville, IN 47946; (219) 567-2447



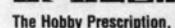
Classic Hobbies, 420 E. Commercial, Lowell, IN 46356; David Scheffler, (219) 696-0649



County Line R/C, 2333 W. State Rd. 38, Sheridan, IN 46069; Greg Welch, (317) 758-6393



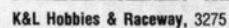
Hobby Barn Raceway, 1950 Springhill, Terre Haute, IN 47802-9694; (812) 299-5773



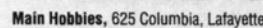
The Hobby Prescription, 115 S. Indiana Ave., Auburn, IN 46706; Roxanne Fike, (219) 925-6699



Hobby World Raceway & Hobbies, 1508 N. Harlan, Evansville, IN 47711; Jeff Wassman, (812) 421-1100



K&L Hobbies & Raceway, 3275 North 525W, LaPorte, IN 46350; (219) 324-0353



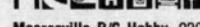
Main Hobbies, 625 Columbia, Lafayette, IN 47901; Randy Palmer, (317) 742-2045



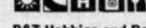
Master Hobbies, 8501 Bash Rd., Indianapolis, IN 46250; Tim or Dan, (317) 576-1961



Mooresville R/C Hobby, 7 Moore St., Mooresville, IN 46158; (317) 831-8877



Mooresville R/C Hobby, 9201 S. State Rd. 67, Camby, IN 46113; (317) 831-8877



P&T Hobbies and Raceway, RR 2 (Hwy 60), Mitchell, IN 47446; Paul Weber, Tom Logsdon, (812) 849-6666; fax, (812) 332-0018



R/C Barn, 310 N. 125 W., Monroe, IN 46772; Mark Lengerich, (219) 692-6600



R/C World of Indiana, RR #2, Box 335, Lynn, IN 47355; (317) 874-2464



R/C Zone & Raceway, 6380 W. 34th St., Indianapolis, IN 46224; Russ or Greg, (317) 290-0067



Race St. Raceway & Hobby, 1126 1/2 Race St., New Castle, IN 47362; John or Nancy Strong, (317) 521-4888



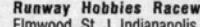
Raceway Park, 919 E. McKinley, Mishawaka, IN 46545; Bob Bean, (219) 256-1020



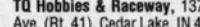
Radio Car Craft, 1925 S. Curry Pike, Bloomington, IN 47403; (812) 332-3245



The Rink, 7900 Whitcomb, Merrillville, IN 46410; Don Reiner, (219) 769-8113



Runway Hobbies Raceway, 5342 Elmwood, St. J., Indianapolis, IN 46203; Randy Hyatt, (317) 784-2421



TQ Hobbies & Raceway, 13710 Wicker Ave. (Rt. 41), Cedar Lake, IN 46303; Jack Wilson, (219) 374-9776



Winner's Circle Speedway, State Road 10 and 55, Roselawn, IN 46310; Harold Holmes, (219) 987-4106

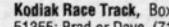


IOWA

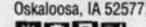
Barnyard Raceway, RR1, Box 243, Plainfield, IA 50666; Fred Good, (319) 276-4825



Dubuque R/C Speedway, Dubuque County Fairgrounds, Dubuque, IA 52001; Paul Conlon, (319) 565-2736



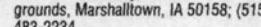
Kodiak Race Track, Box 78, Okoboji, IA 51355; Brad or Dave, (712) 332-7982



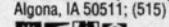
M&M Racetrack, 2434 Pilgrim Path, Oskaloosa, IA 52577; (515) 673-6265



Marble's Hobby Supply, 4685 SE 40th St., Des Moines, IA 50320; Rick Marble, (515) 262-7507



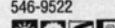
Mr. Car Raceway, Central Iowa Fairgrounds, Marshalltown, IA 50158; (515) 483-2234



North Park R/C Speedway, 805 S. Jerome, Algona, IA 50511; (515) 295-9352



Plymouth County R/C Speedway, 4th Ave. NE (Plymouth County Fairgrounds), LeMars, IA 51031; (712) 546-8788 or 546-9522



Power House Racing, 1200 S. Division St., Creston, IA 50801; (515) 782-4582 or 782-4174



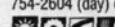
River City R/C Speedway, 317 2nd NW, Mason City, IA 50401; Leonard Johnson, (515) 423-7333



Rotunda Raceway, 101 Bass, RR 1, Box 155A, Storm Lake, IA 50588; (712) 732-4555



Sibley Raceway, Osceola County Fairgrounds, Sibley, IA 51249; Al Reck (712) 754-2604 (day) or 754-3613 (night)



Southwest Iowa R/C Raceway, Kelly Park, Red Oak, IA 51566; (712) 623-5513



Southwest Iowa R/C Raceway, Montgomery County Fairgrounds, Red Oak, IA 51566; (712) 623-5513



Spencer R/C Raceway, 419 Grand Ave., Spencer, IA 51301; Steve or Mike, (712) 262-2603 or -7864



Team Johnson Speedway, Jct. Hwy. 34 & 406, West Burlington, IA 52655; (319) 753-0753



KANSAS

ACE Raceway, 325 Commercial, Emporia, KS 66801; Luke Amend, (316) 343-1933



Chad's R/C World & Raceway, 217 Brownie Ave., Scranton, KS 66537; (913) 793-2313



Ebersole R/C Superspeedway, 11417 W. Hwy. 54, Wichita, KS 67209; Len Ebersole, (316) 722-8888



Pittsburg International Mini Speedway, 5111/2 N. Locust, Pittsburg, KS 66762; (316) 232-1973



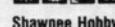
R/C Superdome & TQ Pro Shop, 14 E. Ave. A, Hutchinson, KS 67501; (316) 665-6633



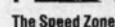
R/C World & Raceway, 217 Brownie Ave., Scranton, KS 66537; Corry Green, (913) 793-2313



RCRC Raceway, 507 N. 4th, Atwood, KS 67730; Bob Dunker, (913) 626-3261



Shawnee Hobby & R/C Raceway, 4603 Shawnee Dr., Kansas City, KS 66106; Bill Pugh, (913) 384-3211



The Speed Zone, 12809 Pfiumm, Olathe, KS 66062; Brian Bierman, (913) 829-5287



KENTUCKY

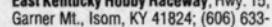
A&J Raceway, Hc-64, Box 322-A, Lily, KY 40740; Al Smith, (606) 523-9710



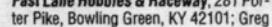
Bluegrass Int'l/Perry's R/C Hobbies, 214 Globe St., Radcliff, KY 40160; William Perry, (502) 351-RACE



East Kentucky Hobby Raceway, Hwy. 15, Garner Mt., Isom, KY 41824; (606) 633-8567



Fast Lane Hobbies & Raceway, 281 Porter Pike, Bowling Green, KY 42101; Greg Bailey, (502) 782-2419



Hobby Center Inc., 2106 Triplett St., Owensboro, KY 42303; Bobby Howell, (502) 683-7611



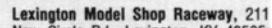
Hobby Plus, 819 Main St., Hazard, KY 41701; Joe Mavaro, (606) 436-3175



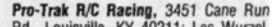
The Lexington Autodrome Raceway, 2753 Richmond Rd., Lexington, KY 40509; (606) 269-7794



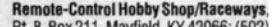
Lexington Model Shop Raceway, 211 New Circle Rd., Lexington, KY 40505; Billy Dent, (606) 293-2951



Pro-Trak R/C Racing, 3451 Cane Run Rd., Louisville, KY 40211; Les Wurzel, (502) 239-4307



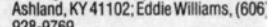
Remote-Control Hobby Shop/Raceways, Rt. 8, Box 211, Mayfield, KY 42066; (502) 247-4715



River Cities Raceworld, 1104 Powell Ln., Flatwoods, KY 41139; (606) 836-CARS



Tri-City R/C Raceway, 1420 Tudor Oaks Ashland, KY 41102; Eddie Williams, (606) 928-9769



West Kentucky R/C Cars, 45 Hawkins Loop, Symonia, KY 42082; (502) 851-3534



Louisiana

Acadiana R/C Hobbies & Raceway, 121 Toledo Dr., Lafayette, LA 70506; (318) 235-5825



Baha Raceways, 2225 Hickory Ave., Harahan, LA 70123; Bruce or Dale Rodriguez, (504) 737-6988

Track Directory

Performance Hobby Raceway, 9135 W. Judge Perez Dr., Chalmette, LA 70044, Guy Trentecosta, (504) 271-2468



Red River R/C, 3232 East 70th, Shreveport, LA 71105; Pete Bradford or Ken Adcock, (318) 424-6325 or 929-7378



MAINE

Central Maine R/C Speedway, 18 Lithgow St., Winslow, ME, 04901; David Prescott, (207) 877-2232



Clay Bowl R/C Hobbies, P.O. Box 61, Greene, ME 04236; Pat Cap, (207) 946-5003



Fast Track R/C Raceway, P.O. Box 247, Gardiner Rd., Sabattus, ME 04280; Raymond Nadeau, (207) 375-4779



Mementos Hobby Shop, 86 Sweden St., Caribou, ME 04736; (207) 498-3711



Rocket R/C Hobbies, Annabessacook Rd., Winthrop, ME 04364; (207) 377-6910



Sanford Speedway, 479C Elm St., Biddeford, ME 04005; (207) 282-8838



Team Terminator Off-Road Track, c/o Hobbies Plus, 479C Elm St., Biddeford, ME 04005; (207) 282-8838



The Racers' Club, 85 Hubbard Rd., Berwick, ME 03901; (207) 698-5337



Walbanger Heaven, 50 Elm St., Houlton, ME 04730; Jack Newman, (207) 532-3169



MARYLAND

ABC Raceway, 2825 Ocean Gateway, Cambridge, MD 21613; (301) 228-4291



Bel Air R/C Raceway, 227G Gateway Dr., Bel Air, MD 21014; Jeff Little, (410) 838-1229



Cockeysville Astrodome, 10824 York Rd., Cockeysville, MD 21030; (410) 666-1098



Doug's Hobby Shop Raceway, Rt. 301N, Box 328, Waldorf, MD 20601; (301) 843-7774



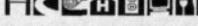
40 Speedway, 933 Pulaski Hwy., Havre de Grace, MD 21708; Doug (410) 538-3135, or Vince, (410) 939-3588



Friendship Off-Road Racers, 1531 Florida Ave., Severn, MD 21144; (301) 551-3050



Fruitland Indoor Race Center, 203 N. Fruitland Blvd., Fruitland, MD 21826; Thomas Duncan, (410) 543-4329



GPA Speedway, 3498 Crain Hwy., Bowie, MD 20715; George Cole, (301) 805-9004



Maryland RCC Track, 4201 G.B. Road, Seabrook, MD 30725; James Holes, (410) 322-6125



Radio Control Cars Inc., 13600-A Annapolis, Bowie, MD 20715; Paul Fauth, (301) 262-1444



Suzie Goose Hobbies, 718 E. Gude Dr., Rockville, MD 20850; (301) 279-2966



The Track, 16806 Oakmont Ave., Gaithersburg, MD 20877; Mimi Wong, (301) 417-9630



MASSACHUSETTS

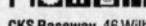
Archer's Lane R/C Raceway, 11B Washington St. (Rt. 1), S. Attleboro, MA 02730; (508) 399-6762



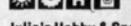
C&C Hobby & Raceway, 562 Russells Mills Rd., S. Dartmouth, MA 02748; (508) 997-4131



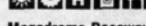
Centerline Hobbies, 167 Corporation Rd., Hyannis, MA 02601; (508) 771-1244



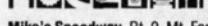
CKS Raceway, 46 Wilbraham St., Palmer, MA 01069; (413) 283-2260



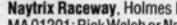
Julio's Hobby & Speedway, 825 Main St. (Rt. 109) Mills, MA 02054; (508) 376-1933



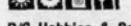
Megadrome Raceway, N. Adams Plaza, Rt. 8, North Adams, MA 01247; (413) 743-7223



Mike's Speedway, Rt. 9, Mt. Farms Mall, Hadley, MA 01035



Naytrix Raceway, Holmes Rd., Pittsfield, MA 01201; Rick Welch or Nate Zuckerman (413) 443-2488 or 443-9886



R/C Hobbies & Speedway, 1311 Purchase St., New Bedford, MA 02740; (508) 991-5040



R/C Hobbies & Speedway, 562B Reed Rd., N. Dartmouth, MA 02747; Rick Morrisroe or Dave Alfonso, (508) 991-5040



R/C World Raceway, 100 Crawford St., Leominster, MA 01453; Dan, (508) 537-9733



West St. Hobbies, 114C Main St., Medway, MA 02053; (508) 533-1231

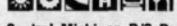


MICHIGAN

Baja Bayou Off-Road Raceway, 5313 W 22 Mile Rd., Tustin, MI 49688; (616) 829-3447



Can-Am Hobbies Speedway Park, 1148 Gratiot, Marysville, MI 48040; (313) 364-3338



Central Michigan R/C Raceway, 1270 James Savage, Midland, MI 48640; Mark Siebert, (517) 631-1488



Cereal City R/C Off-Roaders, 2000 E. Columbia Ave., Battle Creek, MI 49015; (616) 963-2506



Chatter Box Racing, P.O. Box 164, Old State Rd., Central Lake, MI 49622; Bill Altergott, (616) 544-9829



Dirt Slingers Raceway, 2460 Edwards, 2460 S. M139, Benton Harbor, MI 49022; Tom Edwards, (616) 927-1431



DNR Speedways, 4630 Hill Rd., Harbor Beach, MI 48441; Kelcey, (517) 479-6097

Doug's Dirt Way, 5210 Colby Rd., Owassa, MI 48867; Doug Conn, (513) 723-3368

Fun Tyme High Banked Oval, Fun Tyme Adventure Park, 6295 E. Saginaw Hwy., Grand Ledge, MI 48837; (517) 655-5503

Harrison International Speedway, 3519 N. Clare Ave., Harrison, MI 48625; John Starkweather, (517) 539-2921

JJ's R/C Speedshop, 5645 E. 13 Mile Rd., Warren, MI 48092; (313) 977-0420

JT Superspeedway, 825 Golden Ave., Battle Creek, MI 49017; Jerry or Dan, (616) 965-0571

Larry's Performance R/C's, 3430 Highland Rd., Waterford, MI 48328; Larry Rossi, (313) 683-5529

Ludington R/C Raceway, 1483 N. Dennis Rd., Ludington, MI 49431; (616) 843-4654

Mason County R/C Car Track, West Shore Community College, (611 N. Washington Ave., Ludington, MI 49431) Scottsville, MI 49454; (616) 843-8553 or 843-4837

Mike's Raceway, 7 North St., Yale, MI 48097; Mike Huber, (313) 387-4308

NMRC Raceway, 110N. Ostego, Gaylord, MI 49735; Ed Schneider, (517) 732-3963

Pointe R/C, 2119 Summerton Rd., Mt. Pleasant, MI 48858; Frank, (517) 773-5711

R & L Hobbies, 9782 Portage Rd., Kalamazoo, MI 49002; Rex Simpson, (616) 323-3686, fax (616) 329-1744

R & S Hobbies & Raceway, 230 Mill St., St. Louis, MI 48801; Rich Beard or Scott Davis, (517) 681-3463

Rider's Superspeedway, 42040 Koppernick Ste. 400, Canton, MI 48187; Brent Martin, (313) 451-5599

Rider's Superspeedway, 4415 S. Westledge, Kalamazoo, MI 49008; Ken Penn (616) 349-2666

T/A Raceway, 119 North Michigan, Big Rapids, MI 49307; Harvey Bailey, (616) 796-3217

Thumb Raceway, 3441 S. Main St., Marquette, MI 48453; (517) 635-7848

TNT R/C Raceway, 130 W. Washington St., Marquette, MI 49855; Gregory Berg, (906) 228-4098



USA Raceways, 6803 Dixie Hwy., Bridgeport, MI 48722; (517) 777-7704



Village Hobbies-n-Crafts, 17824 N. Maple Island, Hesperi, MI 49421; Alan or Fran, (616) 854-1374



MINNESOTA

ABC Raceway, 120 2nd St. NW, Pipestone, MN 56164; Ross Lange, (507) 825-5065



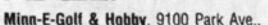
C&S Speedway, 312 N. Broadway, Crookston, MN 56716; (218) 281-6665



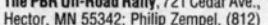
Dr. Skate's R/C Raceway, Frontage Road, La Cresent, MN 56101; Gary Behrens, (608) 788-6141



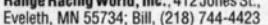
Greater Minnesota Racin' Place, 3302 Southway Dr., St. Cloud, MN 56301; Jon Jackson, (612) 252-9768



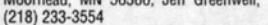
Minn-E-Golf & Hobby, 9100 Park Ave., Elk River, MN 55330; (612) 441-8365



The PBR Off-Road Rally, 721 Cedar Ave., Hector, MN 55342; Philip Zempel, (812) 848-2129



Range Racing World, Inc., 412 Jones St., Eveleth, MN 55734; Bill, (218) 744-4423



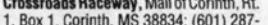
Squid's R/C Autos, 924 Main Avenue, Moorhead, MN 56560; Jeff Greenwell, (218) 233-3554



Trackside, 2300 Myrtle, St. Paul, MN 55101; Winton, (612) 484-3424



Wild West R/C Speedway, 2822 Piedmont Ave., Duluth, MN 55811; Roger Deloach, (218) 727-6248



MISSISSIPPI

Crossroads Raceway, Mall of Corinth, Rt. 1, Box 1, Corinth, MS 38834; (601) 287-2110



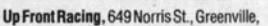
Dixieland R/C Speedway, 2535 Tabernacle Rd., Columbus, MS 39702; Jeffrey Alvey, (601) 328-9429



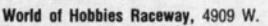
Fast Freddy's Raceway, 20390 Hwy. 49, Saucier, MS 39574; Mark Payne, (601) 832-0315



Norm's R/C Hobbies, 310 E. Beach Blvd., Long Beach, MS 39560; (601) 863-0524



Small Cars Unlimited, 820 Cooper Rd., Jackson, MS 39212; (601) 372-FAST



UpFront Racing, 649 Morris St., Greenville, MS 38701; Trey Bordelon, (601) 334-9411 or 378-9201



World of Hobbies Raceway, 4909 W. Gate Hills Dr., Meridian, MS 39305; Joe McFadden, (601) 693-8368



MISSOURI

All Seasons Hobby, 152 O'Fallon Plaza, O'Fallon, MO 63366; Bob Daniels, (314) 281-8767



Doug's Hobbies, 5221 Veil of Tears, Jefferson City, MO 65109; (314) 893-5861



Fast Trax Racing Assoc., 212N. Lulwood, Springfield, MO 65082; Ken Pope, (417) 831-5046



Gateway R/C Track & Hobbies, 255 Marshall Rd., P.O. Box 345, Valley Park, MO 63088; (314) 225-5844



Harrisonville Hobby Shop & Raceway, 2301 S. Commercial, Harrisonville, MO 64701; Richard Taylor, (816) 887-3055



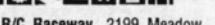
Lafayette Riverside Raceway, P.O. Box 9663, Marshall Rd., Kirkwood, MO 63122; Don Laningham, (314) 966-8912



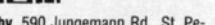
Owensville Raceway, Hobby Shop & More, 115 N. First St., Owensville, MO 65066; Mike Brune, (314) 764-3461



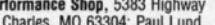
Ozark Hobby, Rte. 6, Box 248-3, Ozark, MO 65721; Deborah Adkisson, (417) 485-4552



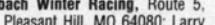
Pevely R/C Raceway, 2199 Meadow, Barhart, MO 63012; Jerry Benz, (314) 464-8627



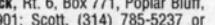
R+ Hobby, 590 Jungemann Rd., St. Peters, MO 63376; (314) 928-9838



S&P Performance Shop, 5383 Highway "N," St. Charles, MO 63304; Paul Lund, (314) 447-5252



Suppenbach Winter Racing, Route 5, Box 66, Pleasant Hill, MO 64080; Larry Suppenbach, (816) 987-5828



The Track, Rte. 6, Box 771, Poplar Bluff, MO 63901; Scott, (314) 785-5237 or Bruce, (314) 785-7400



Garden City Raceway, 11885½ Hwy. 93, Lolo, MT 59847; Dave Erickson, (406) 273-2776



Hobbytown Raceway, 17 Tai Lane, Bozeman, MT 59715; Tom Duncan, (406) 587-3512



Magic City R/C Raceway, 14th St. W. & Central Ave., Billings, MT 59101; (406) 259-9004



Pockets Raceway, Montana State Fairgrounds, Great Falls, MT 59405; Greg V

NEBRASKA

Hobby Town USA, 3404 W. 13th St., Grand Island, NE 68801; Ed Conroy, (308) 382-3451



On-Road Raceway, 315 S. 74th St., Omaha, NE 68114; Doc Holiday, (402) 392-1126



Over the Wall Gang, Higiroabee Speedway, 401 Market Pl., Norfolk, NE 68701; Matt Moeller, (402) 379-0879



The Salvation Army, 4032 Harrison St., Omaha, NE 68147-1012; Lt. Michael Delashmit, (402) 634-3414

**NEVADA**

AMS R/C Raceway, 1130 Icehouse Ave., Sparks, NV 89431; Terry Ramsey, (702) 355-8803



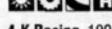
Fastrax Raceway, 3218 W. Desert Inn, Las Vegas, NV 89108; Larry or Sue Ashton, (702) 222-0307 or 656-2855



Little City Hobbies Raceway, 640 Kuenzki, Reno, NV 89503; shop, (702) 786-3611 or Bill Avery, (702) 358-7629

**NEW HAMPSHIRE**

C.T. Hobbies R/C Raceway, 49 Eaton Rd., Auburn, NH 03032; (603) 483-2274



4-K Racing, 100 Warwick Rd., Winchester, NH 03470; (603) 239-6207



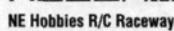
Hobbies Plus R/C Raceway, 14 Celina Ave., Nashua, NH 03063; (603) 882-9200



Hobby Etc., Heritage Place, Rt. 101A, Amherst, NH 03031; (603) 595-8549



Hooksett Hobby Raceway, 1328 Hooksett Rd., Hooksett, NH 03106; (603) 625-2420



NE Hobbies R/C Raceway, 49 Eaton Hill Rd., Auburn, NH 03032; Chuck Therriault, (603) 483-2274



R/C Racing Connection, P.O. Box 905, Ashland, NH 03217; Mike Bridges or Barry Lassiter, (603) 968-9663



Robert's Railroad & Hobbies, Box 431, Rt. 4 at Rt. 152, Northwood, NH 03261; Robert Jeffers, (603) 942-5193

**NEW JERSEY**

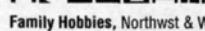
Action Raceway & Hobby Center, Rt. 295 & Harmony Rd., Gibbstown, NJ 08207; (609) 423-8933



Dave Bicknell Memorial Raceway, P.O. Box 914, Absecon, NJ 08201; Rob Caruso, (609) 748-8291



EMC Tracks & Trains, 1235 Rt. 23 South, Wayne, NJ 07470; (201) 628-4838



Family Hobbies, Northwest & Weymouth Rd., Vineland, NJ 08360; Ziggie Tepper, (609) 794-8677



Glassboro's Grand Oval Speedway, 167 S. Delsea Dr., Glassboro, NJ 08028; (609) 863-1551



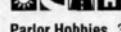
Golden Hobbies & Crafts, 415A Erial Rd., Pine Hill, NJ 08021; (609) 782-1222



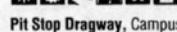
Jackson R/C Racing, Marshall Ave., Jackson, NJ 08527; (908) 905-1593



LBRA Track, 392 Warburton Pl., Long Branch, NJ 07740; (908) 222-5122



Parlor Hobbies, 34 Broad St., Matawan, NJ 07747; Charlie Roder, (908) 566-3158



Pit Stop Dragway, Campus Rd., Totowa, NJ 07512; Kimberly Frank, (201) 942-5955



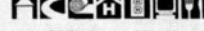
Pixley International Speedway, 763 Peters Dr., P.O. Box 189, Martinsville, NJ 08836; Richard Toole, (908) 560-0399



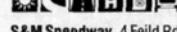
The Race Place, Rt. 33 & 34, Farmingdale, NJ 07727; (908) 938-5215



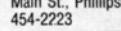
Radical Raceway, 100 Rt. 17S, Lodi, NJ 07727; Lou, (201) 843-6996



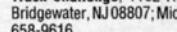
Ricky G's Raceway, 2208A Hamilton Blvd., South Plainfield, NJ 07080; (908) 753-1518



S&M Speedway, 4 Feild Rd., Bedminster, NJ 07921; Lee Spano, (908) 234-2750



Tri-Oval Speedway & R/C Center, 296 S. Main St., Phillipsburg, NJ 08865; (908) 454-2223



Truck Challenge, 1162 Rt. 202-206 N., Bridgewater, NJ 08807; Michael Gill, (908) 658-9616



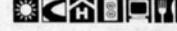
Zeppelin Hobbies, 92 Rt. 23N, Riverdale, NJ 07457; Lou Ballini, (201) 831-7717

**NEW MEXICO**

Cliff Hanger R/C Raceway I, 1515 E. 20th Space D., Farmington, NM 87401; Butch or Joey, (505) 327-3187



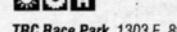
Cliff Hanger R/C Raceway II, 2508 Fox St., Farmington, NM 87401; Butch or Joey, (505) 327-3187



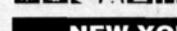
The Pit, Las Cruces Hobby Raceway, 1996-A S. Valley Dr., Las Cruces, NM 88001; (505) 524-8530



Roswell R/C Raceway, 1004 N. Greenwood, Roswell, NM 88201; Larry Jumper, (505) 623-6693



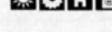
TRC Race Park, 1303 E. 8th St., Truth or Consequences, NM 87901; Gary Whitehead, (505) 894-3211



NEW JERSEY

Action Raceway & Hobby Center, Rt. 295 & Harmony Rd., Gibbstown, NJ 08207; (609) 423-8933

Dave Bicknell Memorial Raceway, P.O. Box 914, Absecon, NJ 08201; Rob Caruso, (609) 748-8291



EMC Tracks & Trains, 1235 Rt. 23 South, Wayne, NJ 07470; (201) 628-4838



Family Hobbies, Northwest & Weymouth Rd., Vineland, NJ 08360; Ziggie Tepper, (609) 794-8677



A&D's FasTracks, 1000 N. Main St., Brewster, NY 10509; (914) 279-2065



A&S Race Center & Hobbies, 120 Cayuga St., Canalview Mall, Fulton, NY 13069; (315) 598-2772



PRO-LINE

Pro-Line Introduces New XTR Compound

Released four years ago, Pro-Line's original XT compound was developed as a lightweight, high-performance blend of natural rubber that would offer superior traction on a variety of track conditions. In addition, tires made of this compound lasted much longer than those made of conventional rubber compounds.

Pro-Line was one of the first tire manufacturers to design car and truck tire-tread patterns to suit specific track conditions: the Race Engineered Design (R.E.D.) Series.



Through a subtle reworking of its XT compound, Pro-Line has taken off-road tire technology to the next level of performance, and the result is the new XTR compound. This was developed to provide serious racers with a softer, more pliable tire that will have more "bite" on harder tracks.

Pro-Line's Winning Off-Road Record

'92 ROAR Modified 2WD National Champion

'92 ROAR Modified 4WD National Champion

'92 ROAR Modified Truck National Champion

'92 NORRCA Modified 2WD National Champion

'92 NORRCA Modified 4WD National Champion

'92 NORRCA Modified Truck National Champion

'92 ROAR Region 12 Modified 2WD & 4WD Champion

'92 ROAR Region 11 Modified 2WD & 4WD Champion

'92 ROAR Region 10 Modified Truck, Stock Truck & 2WD Champion

'92 ROAR Region 4 Modified 2WD & 4WD Champion

'92 ROAR Region 3 Modified 2WD Champion

'92 Reedy Top Gun Modified 2WD, 4WD & Truck Champion



New XTR Part Numbers

8015 Pro-15 XTR Multi-Rib 2.1" Front 2WD

8022 Pro-22 XTR Coarse Spike 2.150" Rear 2WD or 4WD

8065 Pro-65 XTR Multi-Rib w/Staggered Mini-Bars 2.2" Truck Front

8080 Pro-80 XTR Original Mini-Pin Design 2.0" Rear 2WD or 4WD

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Track Directory

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Brockport Speedway, 6000 Sweden Walker Rd., Brockport, NY 14420; Gil & Betty Glidden, (716) 637-6224



Brownie's Pro & Sport Hobbies, 124 Bennett St., Staten Island, NY 10302-1426; John Brown, (718) 727-2194



Cars R/C & Guitars, 4360 Seneca St., West Seneca, NY 14224; (716) 674-0905



Capital District R/C Racers, 27 Venus Dr., Albany, NY 12205; Keith Green, (518) 783-7859



Catskill Regional R/C Raceway, Glasco Turnpike, Mt. Marion, NY 12456; (914) 336-5951



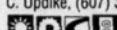
Central New York R/C Auto Racers, Martin St., P.O. Box 116, Rome, NY 13440; John Orr, (315) 336-5140



Chipmunk Hill R/C Speedway, 217 Pine St., Theresa, NY 13961; Ted House, (315) 628-5065



Creekside R/C Raceway Park, 5242 Route 288, Trumansburg, NY 14886; Lawrence C. Updike, (607) 387-5513 after 6 pm.



D&J's Speedway, 94 Maple St., Croton-on-Hudson, NY 10520; Dan Spatta, (914) 271-5797



Daytona Miniature Raceway, 59 Lamar St., W. Babylon, NY 11704; (516) 491-4041



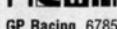
Dirt Track, 17 Fairway Dr., Manorville, NY 11949; Billy Wroblewski, (516) 878-0737



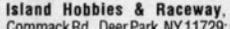
East End Off-Roaders, Route 25A at Gull's Square, Wading River, NY 11792; (516) 929-8844



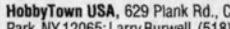
Gamien's R/C Motor Speedway, 8453 Rt. 11, P.O. Box 1430, Cicero, NY 13039; Dave Wright, (315) 699-2991



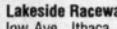
GP Racing, 6785 Martin St., Rome, NY 13440; Greg Philey, (315) 336-5140



Island Hobbies & Raceway, 410 Commack Rd., Deer Park, NY 11729; (516) 254-6229



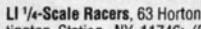
HobbyTown USA, 629 Plank Rd., Clifton Park, NY 12065; Larry Burwell, (518) 383-1215



Lakeside Raceway & Hobbies, 712 Willow Ave., Ithaca, NY 14850; (607) 272-0248



Latest Hobbies & Raceway, Rt. 25A, Wading River, NY 11792; (516) 929-8844



LI 1/4-Scale Racers, 63 Horton Dr., Huntington Station, NY 11746; (516) 351-5384



Long Island R/C Club, P.O. Box 539, Miller Place, NY 11764; John Strahm, (516) 821-2797 or John Kiernan, (516) 821-8923



Maspeth Raceway, Rust St. & 57 Rd., Maspeth, NY 11378; Walter, (718) 897-7921



North Fork Pacesetters, Jimmy Jon's Hobby House, 7355 Main Rd., Mattituck, NY 11952; (516) 298-2020



Norwood Hobbies Raceway, 2-4 S. Main St., Norwood, NY 13668; Tom Jarvis, (315) 353-6621



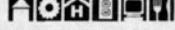
Performance Hobbies Raceway, 205 North Ave., Webster, NY 14580; Anthony Cenzi, (716) 621-1274



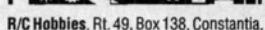
Performance Plus R/C Speedway, The Hobby House, 114 1/2 Jones & Gifford Ave., Jamestown, NY 14701; (716) 488-1772



Queens Off-Roaders, 42-1213th St., Long Island City, NY 11101; (718) 392-5766



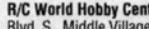
R/C Competition Corner, K-Mart Plaza, Mattydale, NY 13211; (315) 455-8718



R/C Hobbies, Rt. 49, Box 138, Constantia, NY 13044; Roy Catholdi, (315) 623-9536



R/C Speedway & Hobbies, 155 State St., Watertown, NY 13601; Steve Pena, (315) 788-1320



R/C World Hobby Center, 69-57 Juniper Blvd. S., Middle Village, NY 11379; (718) 326-0002



Race O Rama, 44 Sharon Ave., Plattsburgh, NY 12901; James Varno, (518) 562-5442 or 643-2678



Raceworld R/C & Hobby, Budd Rd., Phillipsport, NY 12769; Joe Colombo Jr., (914) 754-7664



Rampage R/C, 53-57 Beadart Pl., Hyde Park, NY 12538; Brian Walker, (914) 229-2456



rapid Transit Raceway, 2104 Broadway, Schenectady, NY 12306; Dick Crounse, (518) 372-0777



Riverside R/C & Hobby, P.O. Box 125, Rt. 126, Beaver Falls, NY 13305; (315) 346-1682



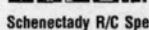
Rochester Raceway & Hobby, 1725 N. Clinton Ave., Rochester, NY 14621; George, (716) 467-2427



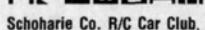
Rock River Model Hobbies, RD 2, Box 297, Rock River Rd., Interlaken, NY 14847; Carl Schmidt, (607) 532-9489



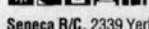
Russet's R/C Racetrack, 1793 Ridge Rd., Ontario, NY 14519; (315) 524-2522



Schenectady R/C Speedway, 955 State St., Schenectady, NY 12307; (518) 370-3747



Schoharie Co. R/C Car Club, P.O. Box 126, Cobleskill, NY 12043; (518) 234-4600



Seneca R/C, 2339 Yerkes Rd., Romulus, NY 14541; (315) 789-8343



Skaneateles Raceway & Hobby, P.O. Box 102, Rt. 20, W. Genesee St., Skaneateles, NY 13152; (315) 685-8077



Small Torque Racers of Long Island, 24 Horton Dr., Huntington Station, NY 11746; George Franz, (516) 271-1119



South Shore Hobby & Raceway, 311 W. Roe Blvd., Patchogue, NY 11772; Don Hauck, (516) 758-5567



Southern Tier Raceway & Hobbies, 88 Paige St., Owego, NY 13827; Chet or Anita Harding, (607) 687-5395



Team Earthquake, The Hobby House, 114 1/2 Gones & Gifford, Jamestown, NY 14701; (716) 488-1772



Transit Speedway & Hobbies, 5319 Transit Rd., Depew, NY 14043; (716) 684-7368



Ulster County Speedway, P.O. Box 71, New Platz, NY 12561; Joe Colombo Jr., (914) 754-7664



Walt's Hobby, 2 Dwight Park Dr., Syracuse, NY 13209; (315) 453-2291



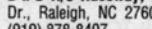
Western New York R/C Speedway, 58 Spring St., Cuba, NY 14727; Jason Congdon, (716) 968-3586



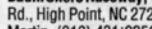
Whitestone Off-Road Raceway, 149-50 15th Rd., Whitestone, NY 11357; Whitestone Hobbies, (718) 767-6767



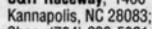
WHITESTONE R/C RACEWAY, 149-50 15th Rd., Whitestone, NY 11357; Whitestone Hobbies, (718) 767-6767



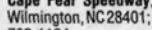
WINDHAM R/C RACEWAY, 1730 Jackson Lake Rd., High Point, NC 27263; Jimmy or Tim Martin, (919) 431-9258



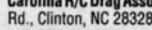
C&H Raceway, 1400 N. Cannon Blvd., Kannapolis, NC 28083; Camera & Hobby Shop, (704) 933-5321



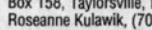
Cape Fear Speedway, 207 Harley Rd., Wilmington, NC 28401; Bob Justice, (919) 762-1184



Carolina R/C Drag Assoc., 907-C Warsaw Rd., Clinton, NC 28328; (919) 592-9489



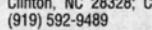
Carolina Hobbies R/C Raceway, Route 1, Box 158, Taylorsville, NC 28681; Kim & Roseanne Kulawik, (704) 495-4040



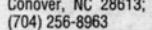
Clapp's R/C Motor Speedway, Rt. 4, Box 3004, Siler City, NC 27344; Al Clapp, (919) 663-3198



Clinton R/C Raceway, 907-C Warsaw Rd., Clinton, NC 28328; Corbett Marshburn (919) 592-9489



Dan's R/C Raceway, Rt. 4, Box 392A, Conover, NC 28613; Danny Dellinger, (704) 256-8963



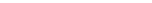
Granite City R/C Raceway, 192-1 N. Main St., Mt. Airy, NC 27030; (919) 786-1466



Hacienda Hills Speedway, 20 Hacienda Hills, Minot, ND 58701; Kenny Duchscherer, (701) 839-4419



Northern Mini Racers, P.O. Box 415, Minot, ND 58702; Patrick McWethy, (701) 839-8868



Hi-Performance Hobbies & R/C Raceway, P.O. Box 320, Earl, NC 28038; Derrell Hollifield, Steve Bliss, (704) 482-4391



Hobbies, Etc., 5540 Atlantic Springs, Raleigh, NC 27604; Don Asplen, (919) 790-1444



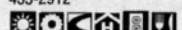
Hobby Park, W. Clemmonsville Rd., Winston-Salem, NC 27103; Dick Butler, Parks & Recreation, (919) 727-2063



The Hobby Speedway, Hwy. 25, P.O. Box 279, Naples, NC 28760; Jerry or Kelda Bowers, (704) 684-9814



Joe's Hobby Shop & Raceway, Rt. 2, Box 682-B, Bessemer City, NC 28016; (704) 435-2912



Motorlead R/C Raceway, 125 Park St., Canton, NC 28716; (704) 648-7911



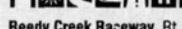
Mountain R/C Raceway, Hwy. 107N, P.O. Box 67, Glenville, NC 28736; (704) 739-3709



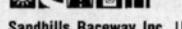
PC Hobbies, 143 Industrial Dr., King, NC 27021; Mike Ingles, (919) 983-2514



Reedy Creek Raceway, Rt. 14, Box 946, Conard Sowers Rd., Lexington, NC 27292; (704) 731-4022



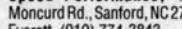
Sandhills Raceway Inc., US #1 South, Aberdeen, NC 28315; (919) 944-7414



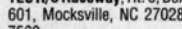
Smiley Face Raceway, 120 W. Center St., Mebane, NC 27302; (919) 563-3822



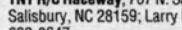
Speed Performance, 4121 Lower Moncure Rd., Sanford, NC 27330; Howard Everett, (919) 774-3843



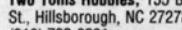
TLC R/C Raceway, Rt. 6, Box 321-A, Hwy. 601, Mocksville, NC 27028; (704) 492-7569



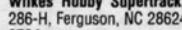
TNT R/C Raceway, 707 N. Salisbury Ave., Salisbury, NC 28159; Larry Martin, (704) 633-0647



Two Toms Hobbies, 155 Boone Square St., Hillsborough, NC 27278; Tom York, (919) 732-6221



Wilkes Hobby Supertrack, Rt. 1, Box 286-H, Ferguson, NC 28624; (919) 973-3734

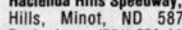


NORTH CAROLINA

Crystal Springs Off-Road, 1200 53 Ave. SW, Minot, ND 58701; (701) 852-9590



Hacienda Hills Speedway, 20 Hacienda Hills, Minot, ND 58701; Kenny Duchscherer, (701) 839-4419



Northern Mini Racers, P.O. Box 415, Minot, ND 58702; Patrick McWethy, (701) 839-8868



KAR R/C Raceway, 14511 Seacrist Rd., Salem, OH 44460; (216) 537-4039



Paulding R/C Speedway, 103 N. Main, Paulding, OH 45879; Virgil Simindinger, (419) 238-0633



The Racer's Choice R/C Hobbies & Raceway, 1298 US Rt. 42, Mason, OH 45040; (513) 398-5539

RBI R/C Speedway, 110 Springdale Ave., Wintersville, OH 43952; Frank Luckino, (614) 264-9101

OHIO

AAA Action Speedway, P.O. Box 6, Morral, OH 43337; Tim McKnight, (614) 465-9891 or Bill Harris, (614) 387-5912



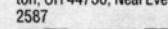
Aaron's Off-Road R/C Raceway, 5096 Rt. 127 S., Eaton, OH 45320; Aaron Garrett, (513) 452-1662



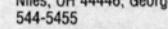
Aircraft's R/C Raceway, 1370 Custer-Orangeville Rd., Brookfield, OH 44403; (216) 448-1573



Alternative Racing Association, Canton R/C Speedway, 2600 17th St., East Canton, OH 44730; Neal Everhart, (216) 484-2587



American Raceway, 234 Robbins Ave., Niles, OH 44466; George Nikoloff, (216) 544-5455

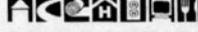


Bryan Thunderdrome, Townline Rd., Bryan, OH 43

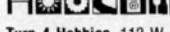
Right Choice Hobbies, 7760 Garrison Ave., Cincinnati, OH 45247; (513) 353-3343



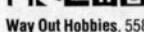
Strongsville Speedway, 13315 Prospect, Strongsville, OH 44136; (216) 572-0430



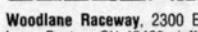
Trusso's R/C Raceway, 100 W. Crain Ave., Kent, OH 44240; Bill, (216) 673-0422



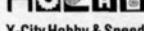
Turn 4 Hobbies, 112 W. Main St., Van Wert, OH 45891; Virgil, (419) 238-6840



Way Out Hobbies, 5583 Centerpoint Rd., Georgetown, OH 45121; (513) 375-4984



Woodlane Raceway, 2300 E. Dorothy Lane, Dayton, OH 45420; Jeff Simpson, (513) 298-1166

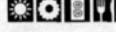


Y-City Hobby & Speedway, 120 S. 6th St., Zanesville, OH 43701; Kevin McKenna, (614) 455-3025



OKLAHOMA

Off-Road Car Assoc. of Tulsa, 1924 W. Pittsburg Ct., Broken Arrow, OK 74012; Mark Seay, (918) 496-8961



R/C Auto Racing, 501 Westland Dr., Edmond, OK 73034; Gary Garrett, (405) 348-9253



RCRC, 400 S. Vermont, Suite 104, Oklahoma City, OK 73108; Rick or Steve, (405) 947-7223



Wild Country Speedway, 127 South Main, Porter, OK, 74454; Charles McCollough, (918) 685-0372 or 687-1686

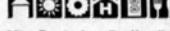


OREGON

Aero Sports & Hobbies, 17941 NE Glisen, Portland, OR 97230; Mark Taylor, (503) 699-7665



The Finish Line R/C Raceway, 560 W. D' St., Apt. 6, Creswell, OR 97426; Rod Carothers, (503) 895-4395



Mt. Bachelor Radio Raceways, 225 Centruy Dr., Bend, OR 97701; Rex Baldwin, (503) 389-6160



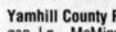
North Lawrence Raceway, 36 N. Lawrence, Eugene, OR 97401; Gary Hill, (503) 484-9857



R/C Plus Hobbies Raceway, 2029 25th St. SE, Salem, OR 97302-1130; Ron Smith, (503) 364-9188



R/C Speed Center, 2810 N. Pacific Hwy., Medford, OR 97501; (503) 779-8298

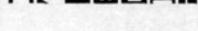


Yamhill County R/C Car Club, 722 Morgan Ln., McMinnville, OR 97128; Larry Rucker, (503) 472-7234

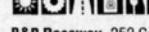


PENNSYLVANIA

A-1 R/C Speedway, 15 S. Hanover St., Hummelstown, PA 17036; Clyde Felker, (717) 566-3335



Ansolan, 54 High St., Fairchance, PA 15436; Timothy Abraham, (412) 564-9956



B&B Raceway, 252 Geiger Rd., Philadelphia, PA 19115; Rod Smith, Doug or Dave Bruestle, (215) 686-6086



Brian's Raceway, 733 Flexer Ave., Allentown, PA 18103; (215) 435-1862



CEB Motors R/C Div., 5743 Molly Pitcher Hwy., Marion, PA 17235; Charlie Booze, (717) 375-4635



Clearfield R/C Car Club, P.O. Box 297, Clark Hill Rd., Hyde, PA 16843; Joe Welch (814) 765-3045



Cressona Mall Speedway, Rt. 61, Pottsville, PA 17901; (717) 385-3506



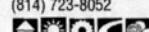
DARCAR, RD 1, Box 290, DuBois, PA 15801, (814) 375-0687



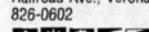
Denwick R/C Hobbies & Raceway, 5601 Lincoln Way East, Fayetteville, PA 17222; Charles Gardenhour, (717) 352-8899



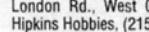
Dreamboat Hobbies, 2810 Pennsylvania Ave. W., Warren, PA 16365; Louie Dussia, (814) 723-8052



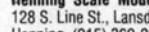
East St. Raceway & Art Center, 747 E. Railroad Ave., Verona, PA 15147; (412) 826-0602



H/H Raceway, 402 W. Avondale-New London Rd., West Grove, PA 19390; Hipkins Hobbies, (215) 869-8585



Henning Scale Models R/C Raceway, 128 S. Line St., Lansdale, PA 19446; Bill Henning, (215) 362-2442



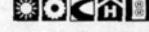
High Tech Hobbies, 13250 Rt. 30; N. Huntingdon, PA 15642; Ken Brooks, (412) 864-5278



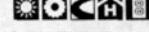
Hipkins Hobbies Raceway, 402 W. Avondale-New London, West Grove, PA 19390; Doug Hipkins, (215) 869-8585



Hobby America Raceway, 5 Fitzsimmons St., Duke Center, PA 16729; Dan or Mike Coast, (814) 966-3765



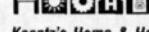
Hobby House Raceway, Downingtown Marketplace, Downingtown, PA 19335; J.T. Nelson, (215) 269-1300



Hobby World Raceway, 172 Shillington Rd., Sinking Spring, PA 19608; Mike Wentzel, (215) 678-8760



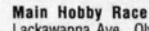
JR Hobby Shop & Raceway, 1806 Nagle Rd., Erie, PA 16501; Ron Bradear, (814) 898-1816



Koontz's Home & Hobby Center, 1205 Hoover St., Pittsburgh, PA 15204; (412) 331-3866



L&R R/C Racing, 15 S. Main St., Red Lion, PA 17356; (717) 244-1108



Main Hobby Race Center, 501 E. Lackawanna Ave., Olyphant, PA 18447; Dave or Zig, (717) 489-4566



Marshall's R/C Raceway, RR 4, Box 640, Honesdale, PA 18431; Bill or Dot Marshall, (717) 729-7458



Modellbahn Ott Hobbies, 1145 E. Philadelphia Ave. (Rt. 73), Gilbertsville, PA 19525; (215) 367-5925



Mt. Laurel Speedway, 835-B Hiester Lane, Reading, PA 19605; Joe Vaccaro, (215) 921-0176



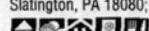
New Garden Farms/Mushroom Bowl, 812 W. Cypress St., Kennett Square, PA 19348; Drew Pannell, (215) 444-1850



Nittany Dirt Racers, 289 Easterly Pkwy., State College, PA 16801; Mitch Timin, (814) 234-8090



Performance Hobby, 1305 Main St., Slatington, PA 18080; (215) 760-9855



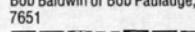
Phantom, 1520 Montrose, Philadelphia, PA 19146; (215) 545-3769



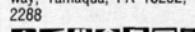
Pit Stop Hobbies, 262 W. Main St., Mount Joy, PA 17552; James F. Stovot Jr., (717) 653-6222



Pro Challenge Raceways, Wycombe Ave. (P.O. Box 536), Lansdowne, PA 19050; Bob Baldwin or Bob Paulauge, (215) 622-7651



Prop & Wheels Raceway, 139 W. Broadway, Tamaqua, PA 18252; (717) 668-2288



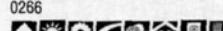
R&D Hobbies & Raceway, 5101-C Jonestown Rd., Harrisburg, PA 17112-2924; Craig Bishop, (717) 545-4984; fax (717) 545-5306



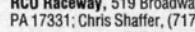
Race Place Hobbies, 201 Station Rd., Quakertown, PA 18951; (215) 538-2394



Radio Controlled Pro Speedway, Rt. 487N, Stillwater, PA 17878; (717) 387-0266



RCO Raceway, 519 Broadway, Hanover, PA 17331; Chris Shaffer, (717) 633-9490



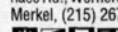
Riverside Raceway, PA Ave. W. & Hickory, Warren, PA 16365; Jeff, (814) 723-4211



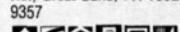
Rolling Wheels, West Hills Shopping Center, Coraopolis, PA 15108; Peggy, (412) 262-4858



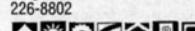
South Mountain R/C Speedway, 357 Furnace Rd., Wernersville, PA 19565; George Merkel, (215) 267-4736



T&T Radio Controlled Racing, Randolph Rd., Great Bend, PA 18821; (607) 723-9357



TC's R/C's, 1537 Freeport Rd., Natrona Heights, PA 15065; Tom Coriale, (412) 226-8802



Trains and Lanes, 3812 Newburg Rd., Easton, PA 18042; Jeff Setzer, (215) 253-8850

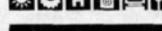


Wagonhill Hobbyland, RD 3, Box 183, Slippery Rock, PA 16057; (412) 458-4711



PUERTO RICO

Cachon Off-Road Track, Box 952, Barranquitas, PR 00794; (809) 857-0341

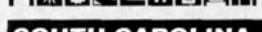


RHODE ISLAND

East Bay Hobbies, 629 Metacom Ave., Bristol, RI 02809; (401) 254-0778



R/C Hobbies, 47 Sandybottom Rd., Coventry, RI 02816; (401) 823-4335



SOUTH CAROLINA

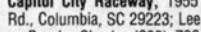
Bandits Performance R/C Hobbies, P.O. Box 1533, Darlington, SC 29532; Bryan Howle Jr., (803) 393-3333



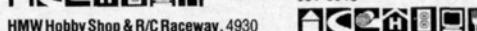
Berea R/C Speedway, 707 Sulphur Springs Rd., Greenville, SC 29611; (803) 246-4702



Capitol City Raceway, 1955 Legrand Rd., Columbia, SC 29223; Lee Moutlon or Brooks Shealy, (803) 788-7749 or 788-4669



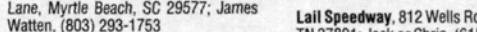
Competition Park, RT. 10, Box 268, Crossville, TN 38555; Terry or Yvette Bowen, (615) 277-5048



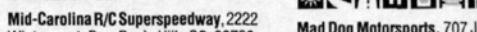
Cumberland Valley Raceway, P.O. Box 233, Ashland City, TN 37015; Jamie Pate, (615) 792-4371, ext. 1195



D&M's Downtown Raceway, 2703 US Hwy. 411S, Maryville, TN 37303; (615) 681-8919



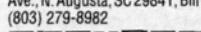
Hobby World Raceway, 185 S. Jefferson, Cookeville, TN 38501; Scott Large or Scott Watson, (615) 528-2808



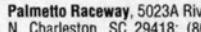
Lair Speedway, 812 Wells Rd., Maryville, TN 37801; Jack or Chris, (615) 983-9207



Mid-Carolina R/C Superspeedway, 2222 Wintercrest Dr., Rock Hill, SC 29732; Fred Penland, (803) 328-8278



Monaco's Raceway, 727 E. Buena Vista Ave., N. Augusta, SC 29841; Bill Courson, (803) 279-8982



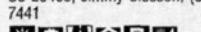
Palmetto Raceway, 5023A Rivers Ave., N. Charleston, SC 29418; (803) 566-0068



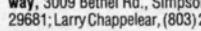
R/C Speed Shop & Raceway, 2122 Platt Springs Rd., W. Columbia, SC 29169; Eric Prevost, (803) 791-4715



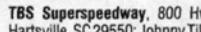
Sidewinder's R/C Raceway Park, 1601-B West Enterprise St., North Charleston, SC 29406; Jimmy Closson, (803) 744-7441



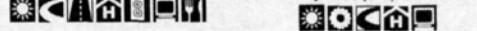
TBS Superspeedway, 800 Hwy. 15N, Hartsville, SC 29550; Johnny Tiller, (803) 332-7117



Thunder Valley R/C Speedway, 432 E. Chruch Rd., Easley, SC 29642; Tommy Ellison or Wayne Day, (803) 859-2323



Tuckasee Off-Road Raceway, 100 Lafayette Rd., Clarksville, TN 37042; Denn Hayward, (615) 645-2635

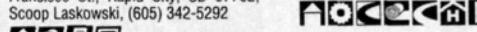


TEXAS

AA Raceway, 1617 Toomey Rd., Austin TX 78704; (512) 474-8277



Anchored Acres Raceway, 1101 Sheppar Rd., Burkhardt, TX 76354; Bob & Patric Veal, (817) 569-4707



Track Directory

Austin R/C Center, 9702 Gray Blvd., Austin, TX 78758; Caton Cobb, (512) 832-8144



Budget Raceway, RR 1, Box 400 I-35, Bruceville, TX 76630; (814) 859-5296



Checkered Raceway, 11744 Wilcrest #140, Houston, TX 77099; Rod Ward, (713) 849-3054



Dove R/C Speedway, 400 South I-35, Bruceville, TX 76633; Curtis A. Rowe, (817) 757-1150



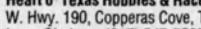
Eagle Hobby Center, 3601 Shepherd, Balch Springs, TX 75180; Terry Cooke, (214) 557-5290



Eastex Raceway, 45000 Hwy. 59 N., New Caney, TX 77357; Heinz Falke, (713) 399-1527

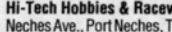


Hai's R/C Raceway, 1440 Bessemer, El Paso, TX 79936; (915) 591-2213

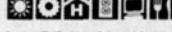


Heart o' Texas Hobbies & Raceway, 309 W. Hwy. 190, Copperas Cove, TX 76522;

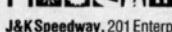
Larry Gholson, (817) 547-7505



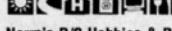
Hi-Tech Hobbies & Raceway, 1107 Port Neches Ave., Port Neches, TX 77651; (409) 724-2315



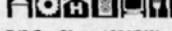
Indy R/C World, 220 Mesquite Village, Mesquite, TX 75150; (214) 686-7744



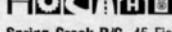
J&K Speedway, 201 Enterprise Row, Suite 101, Conroe, TX 77301; J&K Hobbies, (409) 760-1986



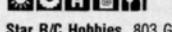
Norm's R/C Hobbies & Raceway, 2551 Lombardy, Ste. 160, Dallas, TX 75220; Norm Mazzola, (214) 357-3453



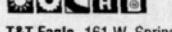
R/C Pro Shop, 12207 West County Road #129, Odessa, TX 79765



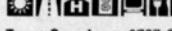
Spring Creek R/C, 45 Fisherman's Rd., San Angelo, TX 76904; (915) 944-3850



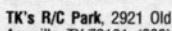
Star R/C Hobbies, 803 Garcia St., Port Isabel, So. Padre Island, TX 78578; Fred Carr, (512) 943-7546



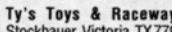
T&T Eagle, 161 W. Spring Creek Pkwy., #601, Plano, TX 75023; Tony Welborn, (214) 517-0562



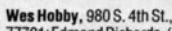
Texas Speedway, 6707 Chimney Rock, Houston, TX 77029; I&I Hobby Center, (713) 661-7137



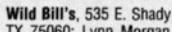
TK's R/C Park, 2921 Old Claude Hwy., Amarillo, TX 79101; (806) 622-0017



Ty's Toys & Raceway, 129 John Stockbauer, Victoria, TX 77901; Ty Dorsey, (512) 575-6154



Wes Hobby, 980 S. 4th St., Beaumont, TX 77701; Edmond Richards, (409) 839-4929



Wild Bill's, 535 E. Shady Grove, Irving, TX 75060; Lynn Morgan or Jerry Williams, (214) 438-9224



Z Track, 1550 Dunnam Dr., Abilene, TX 79602; Chi Chi, (915) 692-8477



UTAH

Hansen Intermountain R/C Raceway, 8481 W. 2700 S., Magna, UT 84044; Kevin Hansen, (801) 250-8303

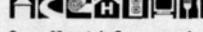


Power Hobbies & Raceway, 135 No. 900 East Suite 7, St. George, UT 84770; April Nutley, (801) 628-8747

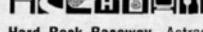


VERMONT

Barre Town R/C Club, Wall St. Complex, S. Main (Rt. 14), Barre, VT 05641; Russ Tribble, (802) 888-2860



Green Mountain Superspeedway & Hobbies, Elm St., Winooski, VT 05404; Charles Barsalow, (802) 893-2660



Hard Rock Raceway, Astrachan Dr., Bennington, VT 05201; Darren Ricchi, (802) 447-2656



Mike's Hobbies & Raceway, 162 N. Main St., Rutland, VT 05701; Stephen Rachlis, (802) 775-0059



VIRGINIA

A-1 Raceways, 940 Radford Rd., Christiansburg, VA 24073; Kay or Charles Franks, (705) 381-9731 or 382-1173



Bob's Hobbies & Raceway, 910-J Brandy Creek Dr., Mechanicsville, VA 23111; Bob Wagner, (804) 746-2758



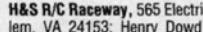
Cooper's R/C Raceway, Rt. 4, Box 12203, Chatham, VA 24531; (804) 724-4182



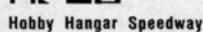
Crossroads Hobbies R/C Raceway, 1104 W. Main St., Salem, VA 24153; Ronnie Black, (703) 387-3414



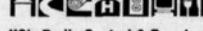
Front Royal R/C Racing Association, Chester St., P.O. Box 1252, Front Royal, VA 22630; Roger Stoots, (703) 636-2637



H&S R/C Raceway, 565 Electric Rd., Salem, VA 24153; Henry Dowd or Stacy LaPrade, (703) 343-4012



Hobby Hangar Speedway, 4433A Brookfield Corp. Dr., Chantilly, VA 22021; Kwang Ko, (703) 631-8820



KC's Radio Control & Repair, Rt. 4, Box 312, Trents Ferry Rd., Lynchburg, VA 24503; Curtis or Kim Wright, (804) 384-8596



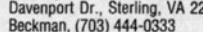
Lane's End Raceway, P.O. Box 153, Bridgewater, VA 22812; Tony Strother, (703) 828-6655 or 3471



Mid Atlantic Raceway, 89 E. Elizabeth St., Harrisburg, VA 22801; (703) 433-3952



NSWC MWR/C Track, C1243C Dahlgren, VA 22448; Doris Copen, (703) 663-1730



Sterling Truck & Auto Racers, 20921 Davenport Dr., Sterling, VA 22170; Ron Beckman, (703) 444-0333



The Tilt-yard, Rt. 1, Box 235A, Dayton, VA 22801; Homer W. Allman Jr., (703) 828-3471 or 828-6655



Trainland R/C Club, 5661 Shoulders Hill Rd., Suffolk, VA 23435; Frank Stevens, (804) 483-2331



Winners Circle, 3236 W. Clay St., Richmond, VA 23230; (804) 355-7076



WASHINGTON

Alfie's, 108 South K St., Aberdeen, WA 98520; (206) 533-6638



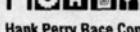
Arlington Heights Speedway, 13629 228th St. NE, Arlington, WA 98223; Shawn Bussert, (206) 435-3442



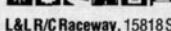
Firgrove TNT Raceway, 10611 136th E., Puyallup, WA 98374; Walt Hale, (206) 845-7675



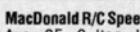
Four Seasons R/C Racing, 146 School St. SE, Olympia, WA 98506; (206) 491-2430



Hank Perry Race Complex, Sullivan Rd., WA 99213; (509) 927-1879



L&L/R/C Raceway, 15818 SE, 287th, Kent, WA 98042; Eric Lake or Bob Lewis, (206) 639-1241 or 631-1664



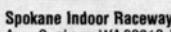
MacDonald R/C Speedway, 12822 307th Ave. SE, Sultan, WA 98294; Brett MacDonald, (206) 793-1886



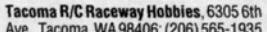
NORA Performance R/C, P.O. Box 955 (1673 Cedardale Rd.), Mt. Vernon, WA 98273; (206) 755-9464



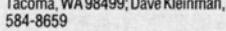
Schmidt's Auto Parts, 10305 Old Hwy. 99, Marysville, WA 98271; Jon Failla, (206) 653-8838



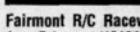
Spokane Indoor Raceway, E. 6422 2nd Ave., Spokane, WA 99212; Mike Gjendem, (509) 534-RACE



Tacoma R/C Raceway Hobbies, 6305 6th Ave., Tacoma, WA 98406; (206) 565-1935

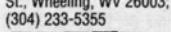


Tearo Raceway, 8012 S. Tacoma Way, Tacoma, WA 98499; Dave Kleinman, (206) 584-8659



WEST VIRGINIA

Fairmont R/C Raceway, 430 Fairmont Ave., Fairmont, WV 26554; Ed Kirby, (304) 363-5509



Fulton's R/C Raceway, 2646 Chapline St., Wheeling, WV 26003; James Fulton, (304) 233-5355



R/C Race Place, Rt. 10, Box 351, Morgantown, WV 26505; (304) 292-0811



Stoltz Raceways, 548 Summit Dr., West Bend, WI 53095; (414) 338-6097



WISCONSIN

ABC/R/C, 1441 B East Main St., Waukesha, WI 53186; Dick, (414) 542-1245

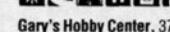


Arena Park Raceway, Kenosha County Parks, 7727 60th Ave., Kenosha, WI 53142; David Delabio, (414) 657-6371

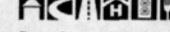
Fox Valley Off-Road Racing Club, R1, Mayflower Rd., Hortonville, WI 54944; (414) 739-9211



Frog's R/C Raceway, Rt. 1, Phillips, WI 54555; (715) 339-2314 or 339-2958



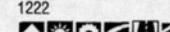
Gary's Hobby Center, 3701 Durand Ave., Racine, WI 53403; Ron, (414) 554-8884 or 1-800-894-6229



Grant County Speedway, 2125 Oak, Hazel Green, WI 53811; Brad Birkett, (608) 854-2246



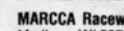
Hobbytown Speedway, 4231 8th St. S., Wisconsin Rapids, WI 54494; (715) 421-1222



JJ's Dirt Heaven, 6028 County K, Champion, WI 54229; (414) 866-9096



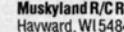
Maniac Motors Raceway, 244 RL 1 A1 Rt. H, Kendall, WI 54638; (608) 847-4833



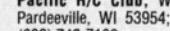
MARCCA Raceways, 1810 S. Park St., Madison, WI 53713; Jeff Gundlach, (608) 273-0519



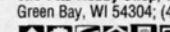
Muskyland R/C Raceway, P.O. Box 1043, Hayward, WI 54843; Hayward R/C Wheels Club, (715) 462-3312



Pacific R/C Club, W7990 Hwy. P., Pardeeville, WI 53954; Rhys Brenner, (608) 742-7100



The Pits Hobby Shop, 786 Morris Ave., Green Bay, WI 54304; (414) 494-4200



R/C Hobby Off-Road Track, Lewiston Lane, Viroqua, WI 54665; Dan or Diane Sawtell, (608) 637-8221



R/C Raceway, 2239 Cty. Rd. E., Baldwin, WI 54002; Lance Van Damme, (715) 684-2690



R/C Raceways & Hobbies, 181 W. Marquette Ave., Oak Creek, WI 53154; Ralph & Cathy Augustino, (414) 764-9701



R/C Spectacular, Milwaukee Mecca Auditorium, c/o Wisconsin Motorsports Show, 11020 W. Rogers, Milwaukee, WI 53227; (414) 327-3999



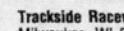
Radio Mania, 129 Harrison St., North Prairie, WI 53153; Bill Bowes, (414) 392-9515



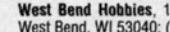
Sparta R/C Raceway, Golf Course Rd., Sparta, WI 54656; Eric Johnson, (608) 269-5861 or 269-6613



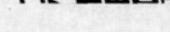
Stoltz Raceways, 548 Summit Dr., West Bend, WI 53095; (414) 338-6097



Tractside Raceway, 4405 W. Bradley, Milwaukee, WI 53223; Joel Gish, (414) 355-1910



West Bend Hobbies, 144 N. Main St., West Bend, WI 53040; (414) 334-0487



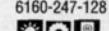
WYOMING

Collectable Creations Off-Road Oval Track, 1790 Dell Range Blvd., Cheyenne, WY 82009; Phil Severson, (307) 632-2156



AUSTRALIA

Wodonga R/C Car Club, 11 Murphy St., Wodonga, VIC 3690; Ron Langman, 011-6160-247-128



BRAZIL

Hobby Center, SQS.210 Bl.H Apt. 204, Brasilia, DF-Brasil 70.273; 061-242-0488

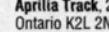


Off Roaders, Av. Guillermo Dumont Villagars, 317, Sao Paulo, CEP 05640

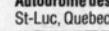


CANADA

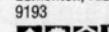
Aprilria Track, 20 Parsons Ridge, Kanata, Ontario K2L 2N4; (613) 836-2577



Autodrome des Prairies, 935 Boul. St-Luc, St-Luc, Quebec J0J 2A0; (514) 348-0718



Cantraxx Raceway, 8876-48 Ave. SE, Edmonton, Alberta T6E 5L1; (403) 469-9193



Circuit R/C Bonzai, 164 Cowie, Granby, Quebec J2G 3V3; (514) 372-3622



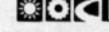
Circuit St-Denis Auto Téléguides, 292 DuLion, St-Denis sur Richelieu, Quebec, J0H 1K0; Francois Rivard, (514) 787-1127



Circuit Teleguide Ville Mercier, 1101 St. Jean Baptiste, Mercier, Quebec J6R 1C6; Norm Foster, (514) 699-4003



Club AVATT, 244, rue Hotel de Ville, Deauville, Quebec; Daniel Vanier, (819) 864-6262



Crash Course, Box 9, Site 8, RR#1, Spruce Grove, Alberta T7X 2T4; Tim Starreveld (403) 963-5795

IROCC Off-Road, Hartland Rd., Victoria, B.C., Gary Allen, (604) 478-8004



J-T International Raceway, 127 Milligan Lane, Napanee, Ontario K7R 8A1; Noel O'Neill, (613) 354-0099



Krazy Trak, 2412 Miller Ave., Saskatoon, Sask.; Brian & Bart Kendel, (306) 221-7344



Mackay Raceway, 1061 W. 14th St. (Mackay Park), North Vancouver, B.C.; "R/C Steve" Mulhill, (604) 984-0987



Quintrax Speedway, Box 1034, Belleville, Ontario, K8N 5B6; (613) 962-1414; fax: (613) 962-7306



Radical Raceway, 150 Bradwick Drive, Unit 25, Concord, Ontario, L4K 1K8; Roland Glass, (416) 660-5238



Roussillon Hobby Track, 177-D St-Jean-Baptiste, Chateauquay, Quebec J6K 3B4; (514) 698-2151



Seaway Valley R/C Raceway, RR 1, Iroquois, Ontario K0E 1K0; Orville or Carol Smyth, (613) 652-4953



Thunder Alley, 1380 London Rd., Sarnia, Ont. N7S 1P8; Rob Smith, (519) 882-3361



Top Qualifier Race Club, McKay Park, North Vancouver, B.C.; Derrick Vandekraats, (604) 985-3948



Union Creek Speedway, 281 Henderson Highway, Winnipeg, Manitoba R2L 1M4; MRCAR c/o Kelvin Community Centre, (204) 667-9186



Universal R/C Speedway, Niagara St., Welland, Ontario; (416) 735-5051



WORRC, 861 Isack Dr., Windsor, Ont. N8S 3W6; Pete Adams, (519) 944-8519 or 974-3346



FRANCE

Auto Electron, 35, rue B. de Ventadour, Limoges, France 87000; M. Boudoul, 55 062763



HONDURAS

Autodromo Accion, Quinta Santa Maria, San Pedro Sula, Honduras, Colonia Rivera Hernandez; Eduardo Hondal, (504) 52-2061



INDONESIA

Beverly's Racing, Palm St., 188, Surabayaya, Jatim, Indonesia; Jhon Mudik, 011-62-31-595-888



JAPAN

Courtney Off-Road, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; USMC Arts & Crafts, 011-81-61173-53674



Foster R/C Raceway, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; Camp Foster Arts & Crafts, 011-81-61173-53674



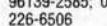
Hansen Off-Road, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; USMC Arts & Crafts, 011-81-61173-53674



Iwakuni R/C Track, PSC 561, Box 978, FPO AP 96310-0978; David T. Eck, 011-81-61173-53662



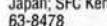
Misawa R/C Raceway, 13th Fighter Squadron, PSC 76, Box 2585, APO AP 96139-2585; 011-81-176-53-5181, ext. 226-6506



Yokata R/C Racers, Yokata Air Base, Tokyo Fussa-Shi, Japan 96326; June Uchiyama, 0425-54-6942



Zama Off-Road Raceway, 17th ASGCM Unit 45013, Box 3232, APO AP 96338 Japan; SFC Ken Campbell, 011-81-3117-63-8478



NEW ZEALAND

Counties R/C Raceway, Pukekohe Showgrounds, Station Rd., Pukekohe, New Zealand; R. Northcott, 09 23 86904

SPAIN

Outlaw-Ultima II, Puerto Rico 27, Madrid, Spain 28016; Juan Vacas, (34) 915197298



ROARCR, Naval Station, Rota, Spain (P.O. Box 53, FPO NY, NY 09540-0013); PO Kelly Sexton, 011-34-56-822652



MEXICO

Baja Jr., Lopez Maeos Y Poseidon, Los Mochis Sinaloa; Gabriela Macias Memo Asemcio, (681) 2-0276



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- Outdoor
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SWITZERLAND

JMRCV-Terraindu Levant, Chemin du Levant, 1290 Versoix, Geneva, Switzerland; fax: 19 41 22 779085



VENEZUELA

Las Fuentes R/C Club, 2da Calle la Fuentes El Paraiso, Caracas, DF 10240, Franco Agrusa, (02) 461-72 55



WEST INDIES

Island Raceway, 8 Mile Post Jacks Hill, St. Andrew, Jamaica, West Indies; Rodin Littau, (809) 926-7034 or 927-1198



ZIMBABWE

Mosi-Oa-Tunya, H9619 Highland Harare, Harare County, Maslortaland, Zimbabwe 46237





by MIKE LEE

THE WEST COAST has one big thing going for it when it comes to R/C racing—trucks! Here, trucks are king of the R/C hill, and the 5th Annual Kyosho/NORRCA Truck Championship proved it. Held on Saturday, August 3, 1992, in Pomona, CA, this one-day race brought over 200 trucks to the world-famous Ranch Pit Stop raceway.

Kyosho, the main race sponsor, also sent its drivers to compete. Kyosho was one of the early truck pioneers, and it remains an active manufacturer of racing trucks and buggies. Our thanks to them for their support.

The competition started at 9 a.m. Race director J.R. Sitman outlined the rules and then opened the event with the Concours competition. About 24 beauties were on the track; I'm glad they didn't ask me to judge this event. Choosing the best is hard. The winner, Ed Sly of Grand Terrace, CA, presented his truck by having it pull an off-road buggy on a trailer; some guys will do anything to impress a judge!

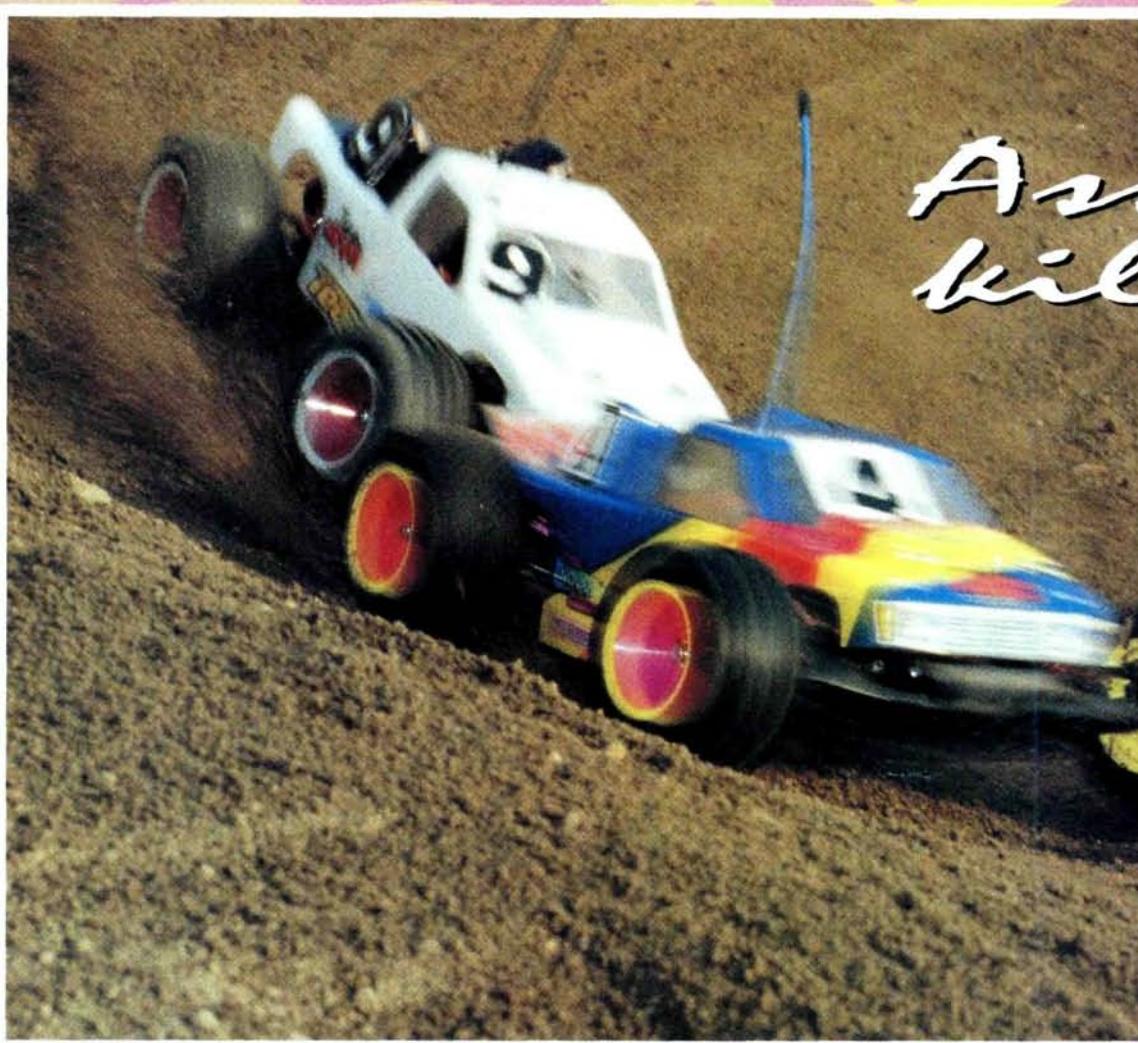
Then it was race time. There were 26 heats in each class, but not every class was a pure truck class. Buggies

were allowed to enter, too, if they had truck-type bodies. Richard Bowles cut his truck body in half from nose to tail, removed 1/2 inch of each half's inside edge, and then rejoined the halves at the center. The result was a narrow truck body that looked as if it was made for the buggy! Pretty innovative!

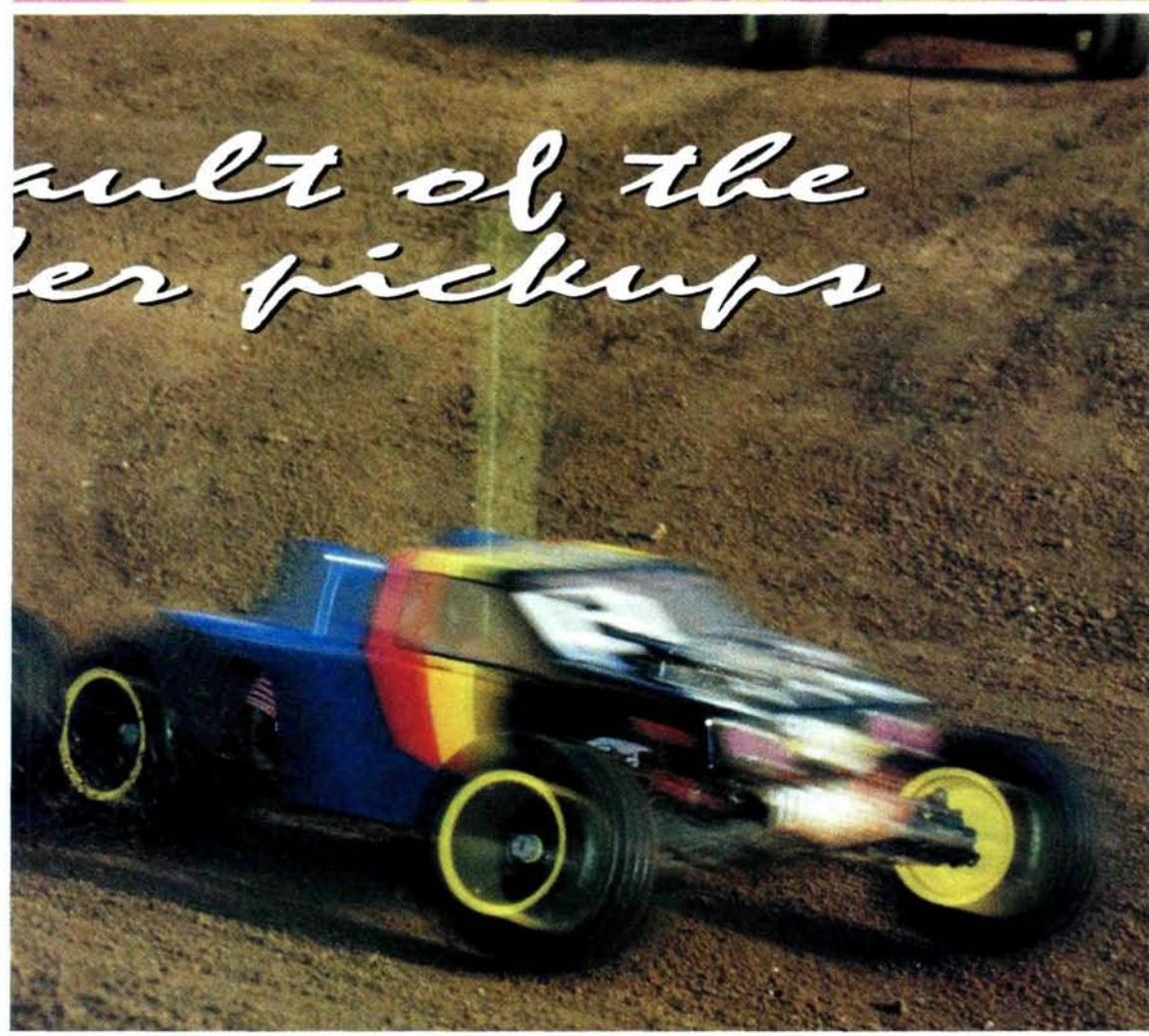
The track layout at the Ranch was about the same as it usually is. From the drivers' stand, you head from left to right down the main straight. At the end of the straight, you're faced with a decreasing radius

KYOSHO / NORRCA

TRUCK CHA



MPIONSHIP



there's a jump at the end, just before turn six. Turn six sweeps to the right, into the switchbacks, and dumps you onto the main straight for another lap. This may sound easy, but it isn't!

RACERS READY!

The track conditions at the race were pretty good, but it was hot. The man next to us even had a barbecue pit. It wasn't the heat from the fire that got to us though, it was the terrific smell of what was cooking! It's too bad that he wasn't racing, or his dinner would have been stolen! Talk about tough racing conditions!

The tires of choice were step-pin knobbies. Losi's step pins for trucks sold like hotcakes in the Pit Shop hobby shop. Actually, anything with a fair-

left sweeper with a definite groove in it. As you clear this, you punch quickly and approach turn three, where you find a narrow dogleg with an anthill blocking the inside line of the corner. You could climb the anthill, but only the careful drivers do it cleanly.

Your car is now heading away from you and slightly to the right as it encounters the tabletop jump. No sweat here; just punch off. After clearing the tabletop, ease off the power as you enter turn four—a dogleg left to the back straight. The back straight isn't really a straight at all. It's affectionately called the "quad" section. Here, there are four evenly spaced jumps that few racers usually clear. Most take two, one and one.

After this hair-raising section, there's another dogleg left turn, and then you head back towards the drivers' stand. Be careful not to stay on the power too long, because



PHOTOS BY MIKE LEE

KYOSHIO / NORRCA TRUCK CHAMPIONSHIP

KYOSHIO / NORRCA TRUCK CHAMPS

STOCK

Fin	Qual	Racer
1	6	Kenny Johnson
2	5	Mike Hibler
3	8	Drew Richards
4	7	Jim Gamble
5	1	Woody
6	4	Bob Marino
7	3	Jim Kieselt
8	2	Howard Combee
9	10	Damon McBride
10	9	Alex Chavez

EXPERT STOCK

Fin	Qual	Racer
1	9	Michael Fletcher
2	6	Jade Kurtchi
3	7	Cliff Montgomery
4	10	Tom Hightower
5	4	Bryan Barns
6	8	Brian Matthews
7	3	Chad Williams
8	5	Daniel Beurrier
9	2	Glenn Williams
DNS	1	Burrito

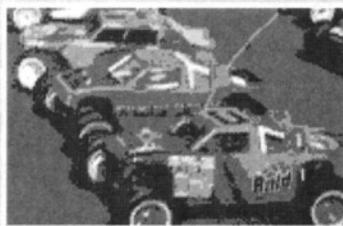


2WD MODIFIED

Fin	Qual	Racer
1	8	Steve Keiser
2	6	Jeff Bowles
3	5	Matt Ganske
4	10	Patera Bhenbhargku
5	4	Joseph Krosner
6	7	Norman Glover

NOVICE

Fin	Qual	Racer
1	9	Anthony A.
2	6	Eric Smith
3	10	Nick Burd
4	5	Darrell Morrison
5	8	Chris Corcoran
6	3	Leonard Diaz
7	1	Jaime Johnnrsrud
8	2	Derek Varney
9	4	Gerg Scott
DNS	7	Michael Craven



EXPERT MODIFIED

Fin	Qual	Racer
1	4	Gary Guest
2	5	Jeremy Kortz
3	2	Bryan Peterson
4	7	Cliff Montgomery
5	6	Brian Jones
6	8	Mike Weed
7	10	Eddie McKay
8	9	Michael Fletcher
9	3	Chad Williams
10	1	Tom Hightower

4WD

Fin	Qual	Racer
1	7	Zero
2	1	Burrito
3	5	Reese Dennis
4	2	Dennis Eging
5	8	Brian Matthews
6	6	Daniel Beurrier
7	9	John Smith
8	10	Matt Disarro
9	3	Mike Lee
10	4	Scott Buchanan

2WD STOCK

Fin	Qual	Racer
1	5	Mike Hibler
2	8	Richard Bowles
3	6	Carlton Duty
4	7	Norman Glover
5	4	Robert Dingemans
6	9	Alex Chavez
7	10	Glenn Williams
8	3	John Brinkley
9	1	Lorin Gantz
10	2	Patera Bhenbhargku

1/10-SCALE GAS

Fin	Qual	Racer
1	5	Steve Reed
2	2	Robert Niemela
3	7	Joe Rivas
DNS	9	John Smith

ly close-knit step-pin pattern worked well on the rear tires. Most drivers needed a slightly aggressive front tire because some areas of the track were very loose, and this caused the standard ribbed tires to wash out. Staggered rib tires fit the bill for many trucks.

THE ACTION

There were two qualifying rounds. (Unfortunately, with the number of trucks registered, the race organizers couldn't squeeze in a third round.) The drivers just concentrated on getting the best run possible in the time provided.

Once the dust from qualifying had blown away, the Mains were launched, and the real racing started. In qualifying, an IFMAR-style starting grid was used; each truck ran on a separate clock. In the Mains, though, it was heads-up racing.

• **Stock.** In this class, Kenny Johnson was the undisputed winner. Mike Hibler and Drew Richards were involved in a mad dash to the finish line, along with two other trucks, and that caused a discrepancy in the results. After much discussion with officials and witnesses, however, the order remained intact: Hibler stayed in front of Richards.

• **2WD Modified.** There was a good race in this class between Steve Keiser and Jeff Bowles. Keiser won by 1.6 seconds after he disposed of Patera Bhenbhargku. Bhenbhargku tried to catch up, but no dice. Jeff Bowles challenged the leader several times during the race, but he ended up in 2nd place. Matt Ganske took 3rd.

• **Expert Modified.** This was a great race. Brian Peterson took the hole-shot, but Gary Guest seized the lead after the first lap. Peterson and Guest went at it for 3 of the race's 4 minutes. The leaders were so busy drilling each other over the quad section that they let Jeremy Kortz join them. Suddenly, it was a three-car race. They swapped positions several times in the last two laps. Guest won, Kortz was 2nd and Peterson settled for 3rd.

• **Sportsman Modified.** This A-Main event (for non-sponsored drivers) restricts cars to 1400mAh batteries to stop the raging "battery war." The rule works well. This event wasn't as exciting as the Expert Modifieds, but it was a good race. Zero eased into an early lead while Reese Dennis and Burrito slugged it out with Brian Matthews for 2nd. Matthews goofed and ended up in 5th.

(Continued on page 166)

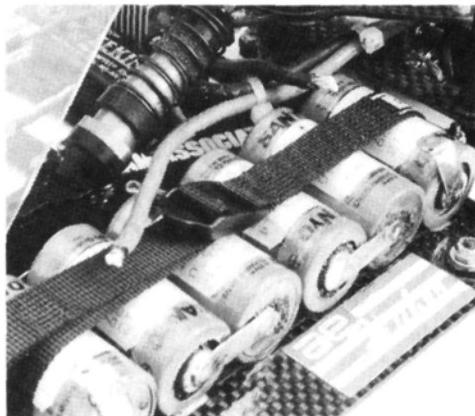
HOW TO

HAVE YOU ever studied a pro's car to see what makes it go so fast? Was it the special batteries, the motor, or the chassis?

Direct connection

All of these things are important, but at the level that most pros compete, the difference between an A-Main and a B-Main finish is often something more subtle. One trick that the pros have been using for years is to hard-wire battery packs to the leads of electronic speed controllers (ESCs). This eliminates connectors and reduces resistance.

Connectors, even high-quality ones, create resistance that impedes the voltage flow from the battery to the ESC. (Some connectors are advertised as having zero voltage loss, but they're



If the pack is accidentally installed backwards, its tabs will face outward, and the ESC wires won't reach them.

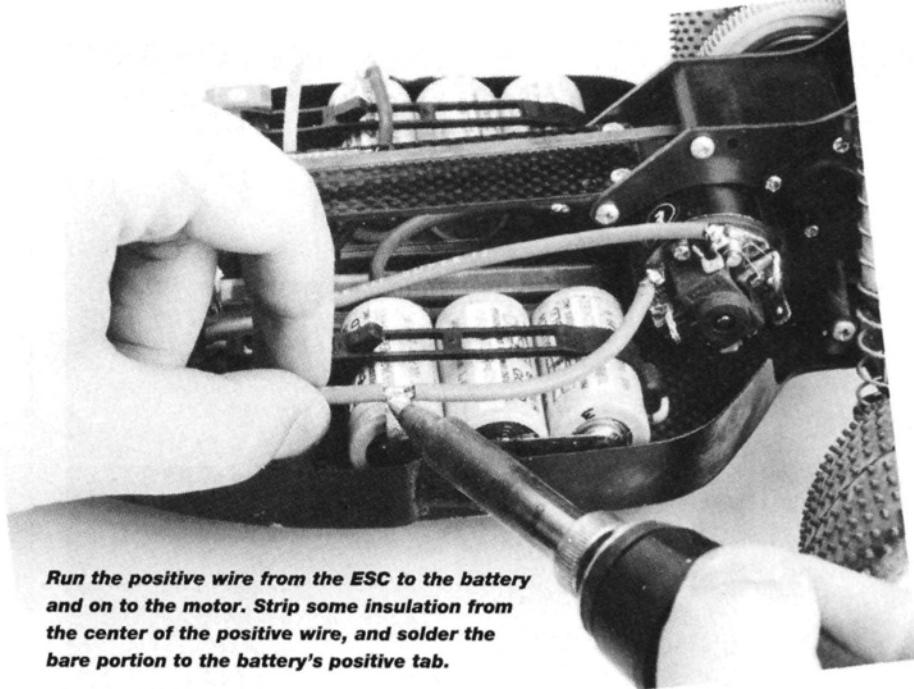
expensive.) Connectors can also loosen or become disconnected, and the cost of replacing them can add up if you own several battery packs. By hard-wiring your battery, you can save money and create a solid connection that has a very low resistance.

more complicated.

Now that you've been adequately warned of potential pitfalls, it's time to hard-wire!

LAYOUT

First, determine the best battery/wire layout. Remember: to reduce resistance, use the short-



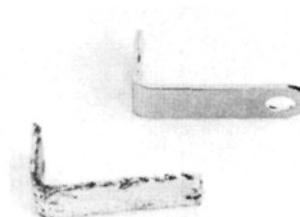
Run the positive wire from the ESC to the battery and on to the motor. Strip some insulation from the center of the positive wire, and solder the bare portion to the battery's positive tab.

HARD-WIRE

READY, SET...

You'll need a few essentials: a soldering iron (Ungar* and Weller* make good ones), 60/40 rosin-core solder and a power supply—either 110V AC or 12V DC, depending on your iron.

You should be proficient with your soldering iron before you attempt to hard-wire. If you solder a pack in place backwards, you run the risk of damaging your ESC or, if it's one of the newer units, blowing its fuse. Also, be sure to allow extra time for battery changes; hard-wiring makes this process slightly



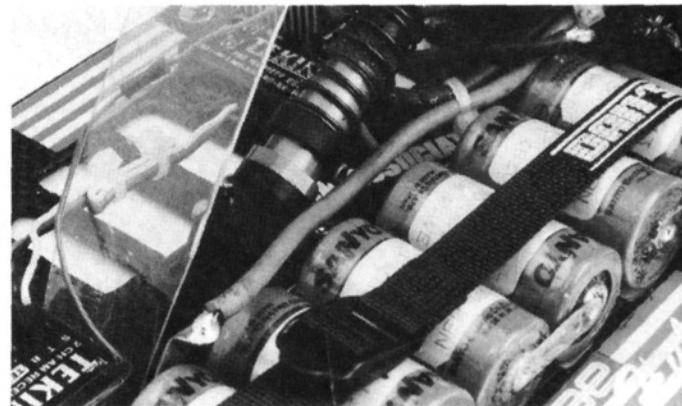
You can make battery tabs out of bars or pieces of braid that are bent at a 90-degree angle on one end.

est wires possible. If your ESC is mounted to the shock tower (often the case in off-road cars), position the cells so that their positive and negative terminals

are in the middle of the pack. If your ESC is mounted in front of or next to the battery, position the cells so that their terminals are at the ends of the pack. This will not only enable you to run one positive wire from the ESC to the battery and on to the motor, but it will also prevent you from soldering the pack in place backward. If your ESC is mounted behind the battery, you'll have to use a jumper wire.

SETUP

Before you begin, solder attachment tabs to the battery's posi-



If the batteries are installed so that their tabs face inward, the positive and negative ESC wires will easily reach the tabs.

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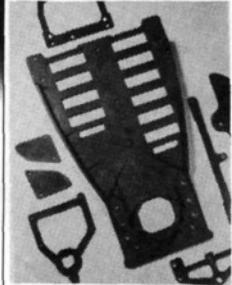
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HARD-WIRE

(Continued from page 105)

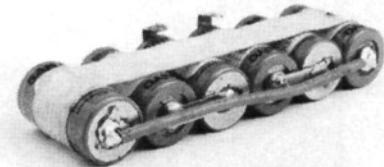
"One trick that the pros have been using for years is to hard-wire battery packs to the leads of electronic speed controllers (ESCs). This eliminates connectors and reduces resistance."

tive and negative terminals. Without the tabs, you would have to solder the ESC leads directly to the cells, and the heat might damage them.

You can fashion tabs out of battery braid or battery bars. Just make a 90-degree bend at one end of the bar or braid; solder that end to the lead and the other to the cell.

HINTS

There are a few things you can do to ensure that your hard-wiring projects are done properly. Re-assemble all your battery packs so that you can hard-wire them in place. Then, put each in your car to see how much wire you need to trim (The



If you have trouble fitting a pack with tabs on its ends into your car, re-assemble it so that its tabs are in the middle, like the one shown.

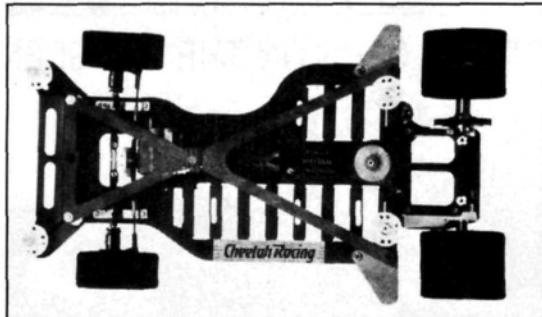
wires should be just long enough to reach the correct terminals.) Also, pay close attention to detail; the time and effort it takes to hard-wire will be wasted if the solder joint is cold or one of the wires is frayed.

For that extra advantage, hard-wiring your batteries might just be what you're looking for. If you want to widen the gap between you and your fiercest competitor, hard-wiring your batteries may give you that extra edge. Also, think of the psychological benefits: you can connect your batteries just like the pros.

*Here are the addresses of the companies mentioned in this article:
Ungar, 5620 Knott Ave., Buena Park, CA 90621.
Weller/Cooper Tools, The Cooper Group, P.O. Box 728, Apex, NC 27502.

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CLUB 10

(Continued from page 64)

sand. It has a low center of gravity and its action was predictable. The springs were much too soft, though. When turning on packed sand, body roll and oversteer were excessive, and the shocks had little effect. The instructions call for 10WT oil, and exposing two holes in the pistons. I used 30WT, and it was still too soft. Going to one hole in the piston was a major improvement.

My friend drove the Club 10 while I took pictures, and he thought I was crazy when I asked him to run the truck along the water's

edge. Everything was fine until I tried to get "one last shot." On his final pass toward the water, a glitch kept the truck from turning and we soon found that the Club 10 doesn't float! It made a pretty decent submarine, though.

That was the last run of the day, but I let it dry overnight and I was back in business with no damage (one advantage of a mechanical speed controller).

If you've built an R/C car or truck before, the Club 10 could be your introduction to competition. It has all the adjustments you'll need, and when you're ready, you can

upgrade it to run with the big boys!

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Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718. ■

TRAXXAS RAD 2

(Continued from page 84)

tracking around. After I installed a set of Litespeed connectors to mate the ESC and

(Continued on page 150)

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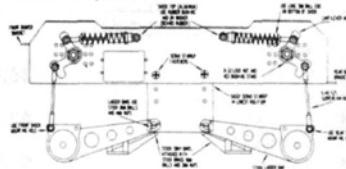
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TRAXXAS RAD 2

(Continued from page 147)

battery, I charged up a Trinity* Zip Pack, made a few adjustments to the suspension and slipper clutch, and headed outside to kick up some dirt! The Hobbymania facility has a huge, banked dirt oval and a tight, twisty off-road track with some killer jumps.

Quite a few racers came out to watch this "Texas Twister" get down and dirty, and mouths dropped open as the Rad flew cleanly over the 2-foot jump and made a smooth, controlled landing. I had set the slipper loose

to compensate for the hard-packed turns, and the Rad tracked through without any sign of under/oversteer. After a battery pack's worth of off-roading, we hit the oval, and the Rad just kept going and going. After subjecting it to some mandatory abuse, I pulled into the pits, put in another pack, and passed the radio around. Everyone was amazed at the performance of this so-called entry-level buggy!

Traxxas has done its homework and produced a superb kit that gives maximum good times for minimum bucks!

Considering the Rad 2's retail price—about \$160—track owners ought to seriously consider setting up a "spec class" for the Rad 2 (and other similar vehicles in this price range) to bring in those newcomers who don't have green for all the hyper goodies. The Traxxas Rad 2 is a great way to have some good cheap fun!

*Here are the addresses of the companies mentioned in this article:

Traxxas Corp., 12150 Shiloh Blvd., #120, Dallas, TX 75228.

(Continued on page 152)

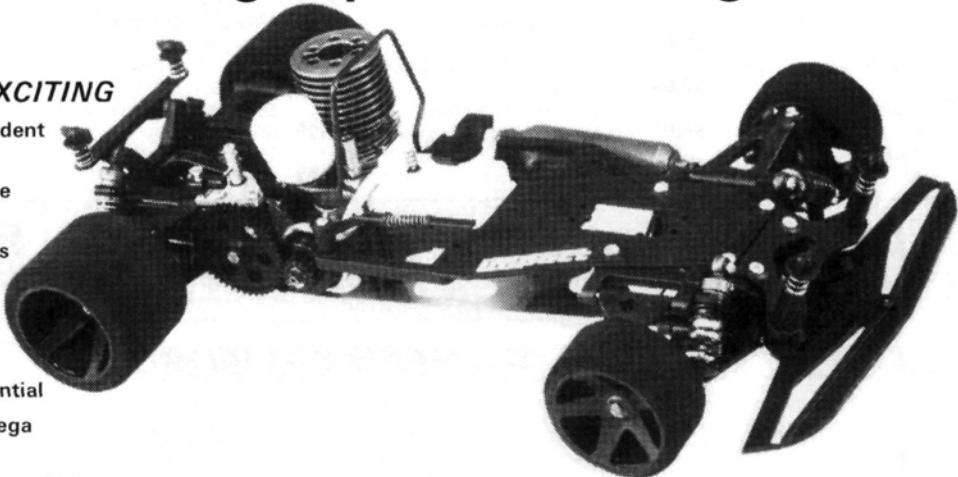
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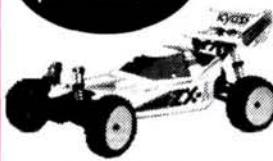
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TRAXXAS RAD 2

(Continued from page 150)

Litespeed, P.O. Box 4765, Spokane, WA 99202.

Pactra Inc., 620 Buckbee St., Rockford, IL 61104.

DuraTrax; distributed by Great Planes Model Distributors, P.O. Box 9021, Champaign, IL 61826.

Dynamite; distributed by Horizon Hobby Distributors, 4105 Fieldstone Rd., Champaign, IL 61821.

Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718.

Hobbymania, 6597 State Rte. 224, Poland, OH 44436.

Trinity Products Inc., 1901 E. Linden Ave., #8, Linden, NJ 07036.

ROAR TRUCK NATS

(Continued from page 112)

use Johnson's truck as a mogul after the turn—much to the crowd's delight.

"After that, Johnson held on to second, and to show the crowd that he wasn't just block-passing for Reed, he went after him in a serious way. He never got around him though, and it finished with Reed winning and taking first overall, followed by Johnson, Pavidis, Hughes, and Junior. It was a wild race.

"The mod class was pretty intense, too. In the first A-Main, Vehlow got the jump, but he got snagged and dropped out. Then, Jack Johnson took the lead for a short time before Pavidis could get around him. After a lot of back and forth, Jon Anderson passed Johnson for second, then Bryan Peterson passed Johnson for third. Hohwart muscled by both Johnson and Peterson to take over the third spot, and then he took over Anderson's second position. Peterson eventually dropped out and let Paul Wynn into the fifth spot. Pavidis took the win, followed by Hohwart, Anderson, Johnson and Wynn.

"The second A-Main had some pretty good racing; Hohwart took the win. Anderson was second, and Pavidis took third."

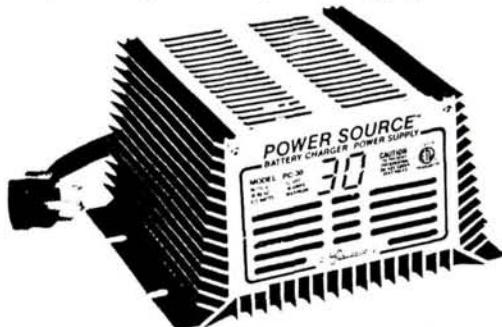
"So it was a tossup between Pavidis and Hohwart?"

"Yeah, they both looked a little amped-out as they headed to the drivers' stand. Pavidis

(Continued on page 165)

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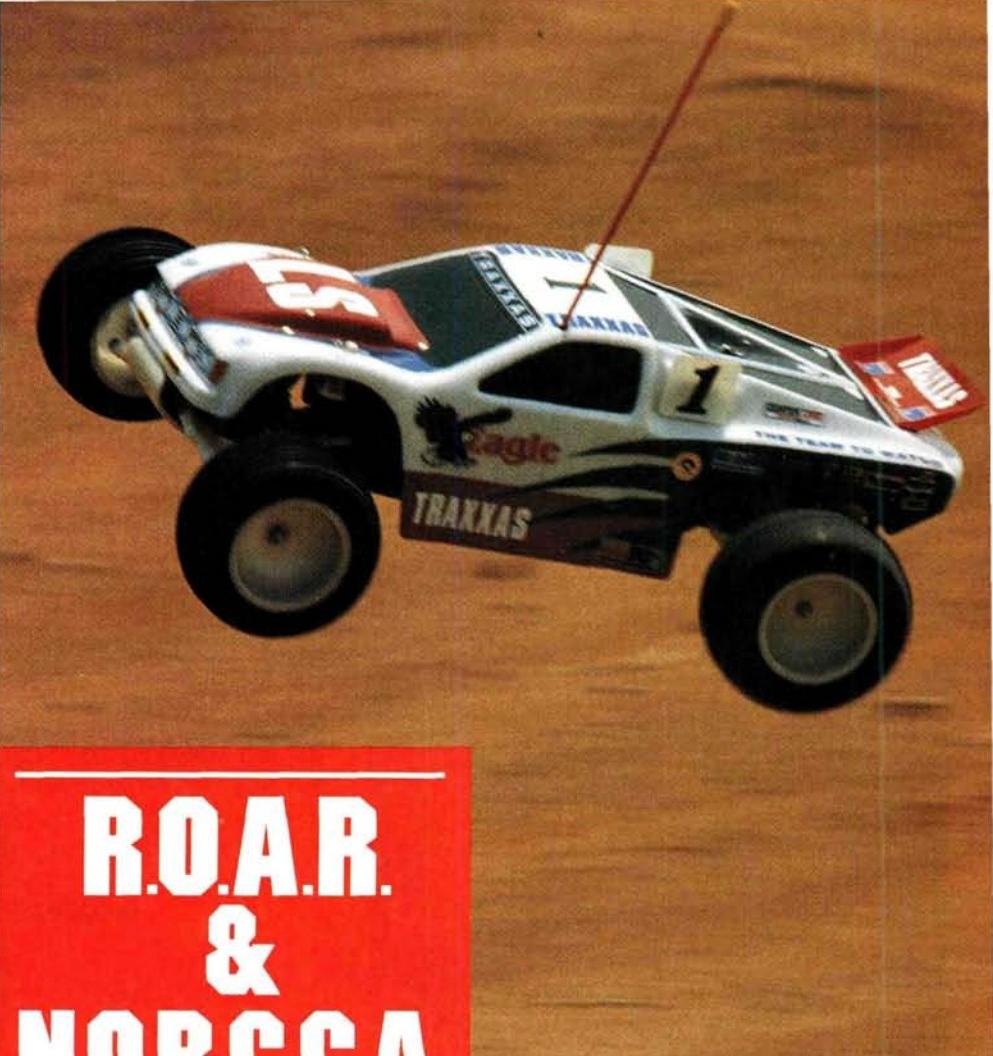
TRAXXAS

BLUE EAGLE LS

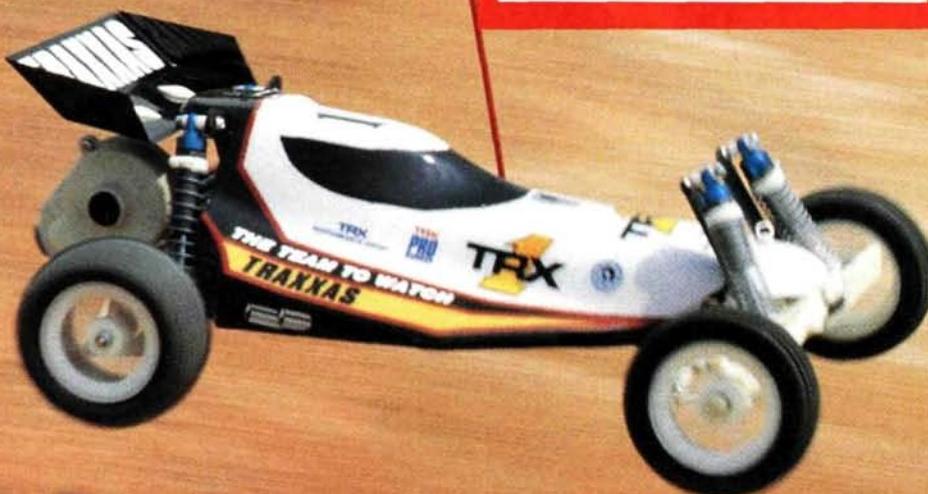
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ROAR TRUCK NATS

(Continued from page 152)

took the early lead over Hohwart, and Gary Guest trailed them. Walters was all over Guest and eventually slid by him. Vehlow rounded out the top five. They finished in that order."

"Good deal. The racing was pretty intense, huh? Were there any other good finishes in the other Mains?"

"Anderson won the stock B-Main over Walters, and in the modified class B-Main, Junior ran a great race. He beat Brian Kinwald, Greg Hodapp and Lett to the finish line in a really decent battle."

"Anything else interesting?"

"Just a lot of good racing, and a lot of trick new stuff. That new Losi tranny looks hi-zoot."

"Yeah, it sounds good."

"Well, I have to get going. I have to get to the airport. All I have to do now is get a few of the racers to help me tip the rental car back onto its wheels."

"WHAT!?"

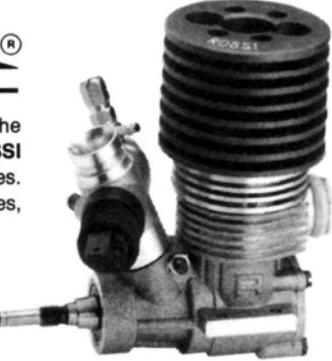
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NORRCA TRUCK NATS

(Continued from page 131)

Meanwhile, Zero was ahead; Burrito ate up the 2nd position, and Reese Dennis took the 3rd slot.

• **1/10-Scale Gas.** In this division, Steven Reed zapped the pack with a two-lap lead over 2nd place winner Robert Niemela.

• **Expert Stock.** This class allows any stock-class motor to be run. (The normal stock class allows only 24-degree timed

motors.) Cliff Montgomery got the holeshot and was followed by Mike Fletcher and Jade Kurtchi. No one else got close to these three drivers as they freight-trained around the track. They swapped the lead several times, took advantage of bobbles, and pushed one another aside. By the 3-minute mark, Fletcher was driving away for the lead, and he left Kurtchi and Montgomery to fight it out. Kurtchi ended up in 2nd and

Montgomery in 3rd.

• **Novice.** In this A-Main event, pole-sitter Anthony A. took the holeshot and never looked back. His pit crew kept telling him to take it easy, and this was good advice. At halfway down, Eric Smith had a chance at the leader, but he couldn't make it stick. Anthony easily took the victory, with Smith in 2nd and Nick Burd in 3rd.

(Continued on page 192)

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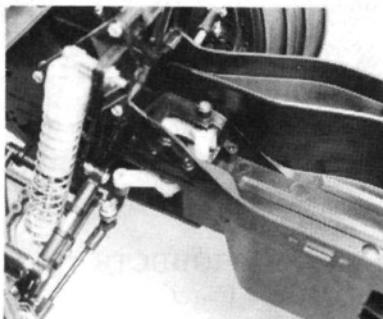
KYOSHO VW Beetle

Kyosho offers a "California" custom design, almost ready-to-run VW Beetle. The 1/12-scale Beetle comes assembled with an .05 motor, a 3-speed mechanical speed controller, a nylon chassis and an independent swing-arm front suspension. It requires a 6-cell battery pack and a 2-channel radio. It's 13.3 inches long, 6.5 inches wide, 4.8 inches high and weighs 2.2 pounds.

Part no. KYOCO 254

Price: \$139.95

Great Planes Model Distributors, 2904 Research Rd., Champaign, IL 61821; (217) 398-3630.



A&L King Cab/Hi-Lux Steering Kits

The kit includes: neon-yellow, 100-percent-nylon bellcranks; composite center link; complete directions; and all necessary hardware. A&L's bellcrank steering kits improve steering and last longer than stock parts. Four bearings are required.

Part nos. 7183 (with bearings); 7083 (without bearings).

Prices: \$29.95; \$15.95.

A&L Mfg., P.O. Box 2115, Corona, CA 91718; (714) 735-5249.



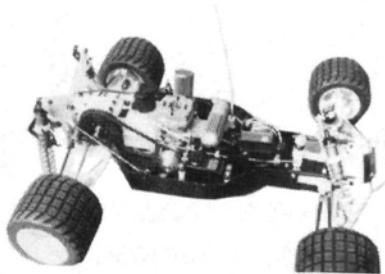
PRO-LINE Pro-120 "Coarse Spike" Truck Tire

Pro-Line's new truck tire provides stability and traction in loose dirt. It fits any 2.2-inch stadium-truck wheel, and it's available in the original XT or the new XTR compound.

Part nos. 7120 (XT); 120 (XTR).

Price: \$16.95

Pro-Line USA, 201 W. Lincoln St., Banning, CA 92220; (714) 849-9781.

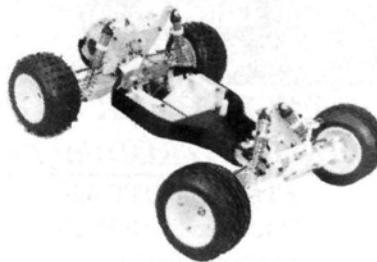


MOODY AUTOMOTIVE Drive Pack

Moody Automotive's simple Drive Pack allows you to convert your electric-powered RC10 or RC10T into a fast, reliable gas-powered racer for off- or on-road competition. All you need is an O.S. CZ-2 engine and a couple of evenings, and you'll have a simple, reliable gas-powered car that can use your electric car's accessories, yet be as fast and exciting as only a gas car can be. Longer run times and no battery charging mean less time in the pits and more racing!

Price: \$80

Moody Automotive Inc., 755 Ash St., Flossmoor, IL 60422; (708) 799-5597.



ASSOCIATED ELECTRICS Entry-Level RC10T Kit

Team Associated's truck kit includes rock-solid features at an affordable price: the bushing version of the Stealth transmission; an Associated stock motor; a mechanical speed controller; new, improved, front and rear gold shocks; and an easy-to-understand instruction manual packed with informative photos and diagrams. It can easily be upgraded to the no. 7001 competition RC10T kit, and it's a tough contender out of the box. Radio and battery aren't included.

Part no. 7011

Price: \$240

Associated Electrics, 3585 Cadillac Ave., Costa Mesa, CA 92626; (714) 850-9342.



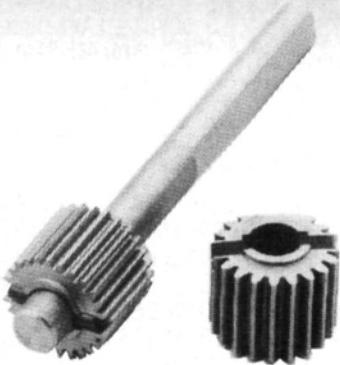
RPM Gear Cover

This injection-molded gear cover will cover up to a 93-tooth, 48-pitch spur gear. It's very durable and offers great protection for your Hydra Drive or slipper clutch. An access hole with a removable plug allows quick and easy slipper adjustment.

Part no. 7307

Price: \$5.95

RPM Custom Engineered R/C Products, 14978 Sierra Bonita Ln., Chino, CA 91710; (714) 393-0366.



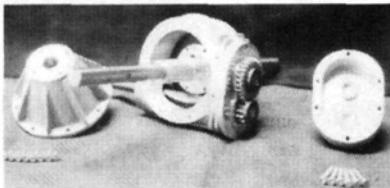
THORP MFG. Stealth Adapter Shaft

This shaft will enable you to adapt the Losi Hydra Drive and slipper clutch to your RC10 Stealth gearbox. It can be used with the Thorp 64-pitch gear and the 64-pitch top gear, or with the stock 48-pitch gear and the Thorp 48-pitch top gear.

Part nos. 4767; 4775 (adapter shaft with 48-pitch top gear); 4770 (adapter shaft with 64-pitch top gear).

Prices: \$9; \$17.50; \$18.

Thorp Mfg. Inc., 4054 E. Mission Blvd., Pomona, CA 91766; (714) 622-6518.

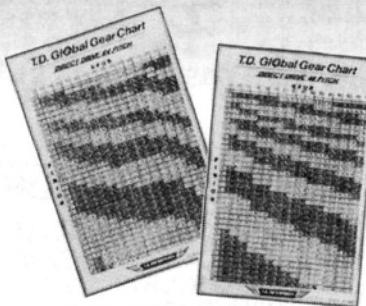


NEW ERA MODELS 1/4-Scale

Quick-Change Rear Housing
The Quick-Change "Drag" rear housing is machined of 356 T6 heat-treated aluminum. The 1/2-inch-diameter 4130 steel axle is available in any length and offset. It has high-quality sealed ball bearings throughout, and the drive shaft is 3/8-inch-diameter steel with plain ends. It measures 5x3 1/2x5 inches. The heat-treated spiral ring and pinion have a ratio of 3.64 to 1. An optional, steel, Quick-Change gear set and New Era, heavy-duty, cast-aluminum clutch housing with two bearings is also available.

Price: \$425

New Era Models, P.O. Box 7378, Nashua, NH 03060; (603) 880-3453.



TD ENTERPRISES Global Gear Charts

TD's Global Gear Charts show direct-drive ratios for almost every gear available. They're compact (6x4 inches), so it's easy to mount them in pit boxes for trackside use. Made to last, they're laminated with 5mm plastic, so they're impervious to sprays and lubricants. Available for 64- or 48-pitch ratios.

Part nos. 1048 (64 pitch); 1050 (48 pitch).

Price: \$3

TD Enterprises, P.O. Box 3301, Lexington, OH 44904; (201) 568-3268.



TRINITY Pro-Stik

Pro-Stik, Trinity's newest tire-traction formula, is designed to be used with the new, high-traction, long-wearing Gomme- and Black Dot-style tires, which contain more natural rubber. Older foam-tire compounds, such as Green and Yellow, also benefit from the use of Pro-Stik. In addition to containing conditioning and cleaning agents, Pro-Stik is made to last for an entire 8-minute race. This formula was used by Joel "Magic" Johnson to win both the 1992 ROAR 1/10- and 1/12-scale on-road Nats.

Part no. RC6677

Price: \$6.99

Trinity Products Inc., 1901 E. Linden Ave. #8, Linden, NJ 07036; (908) 862-1705.



DAHM'S RACING BODIES Commando XL

This new, exciting, super-narrow, aerodynamic, "fastback," racing-truck body for the LX-T sits much lower than the stock body, and it includes instructions for low mounting on the RC10T and the Blue Eagle LS! It's made of strong, light Lexan, and it has a large hood scoop, two rear scoops, a roll bar, a rear tonneau cover, an escape hatch, an extra-long cab with two extra side windows, recessed gas caps, rear vents that can be cut open, Dahm's decals and finishing and mounting instructions. It also includes a free stadium-truck spoiler with mounting hardware and number plates!

Part no. D198

Price: \$19.98

Dahm's Racing Bodies, P.O. Box 360, Cotati, CA 94931; (707) 792-1316.

Descriptions of new products appearing on these pages were derived from press releases supplied by the manufacturers and/or their advertising agencies. The information given here doesn't constitute endorsement by *Radio Control Car Action*, nor guarantee product performance or safety. When writing to the manufacturer about any product described here, be sure to say you read about it in *Radio Control Car Action*.

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NORRCA TRUCK NATS

(Continued from page 166)

• **4WD.** In this class, Aldo Ruiz took the win by a lap over former national champion, John Gudvagen Sr.

• **2WD Stock.** Mike Hibler won this class by over one lap while Richard Bowles and Carlton Duty fought for second. Bowles got the best of it, and Duty was third.

It took almost 12 hours for the racing to

wind down, but what a great time we had! Overall, the scores of the various manufacturers' trucks were pretty close, so the truck wars will continue to rage. ■

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